Bay Area Transportation State of the System 2006

METROPOLITAN TRANSPORTATION COMMISSION and CALTRANS DISTRICT 4

Bay Area Transportation:
State of the System
2006

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The Authoring Agencies

Metropolitan Transportation Commission (MTC)

MTC is the transportation planning, coordinating and financing agency for the nine-county San Francisco Bay Area. The agency also helps to monitor and — in concert with Caltrans and others — to improve the operation of the regional transportation network.

Caltrans District 4

Caltrans District 4 is the operating arm of the California Department of Transportation (Caltrans) for the nine-county San Francisco Bay Area. Caltrans is responsible for the planning, design, construction, maintenance and operation of the state highway system (and the Interstate Highway System in California), and is the state's overall manager of interregional transportation services.

To Users of the Bay Area Transportation System

We are pleased to present *Bay Area Transportation: State of the System 2006*, a digest of key data on the performance of the region's transportation network and facilities. In this report, which primarily includes data from 2005, the Metropolitan Transportation Commission (MTC) and Caltrans District 4 have joined forces to compile, display and briefly comment on statistics that reveal how the Bay Area transportation system is performing and how travel conditions are changing.

Several of the performance measures showcased in the *State of the System 2006* have not been included in previous editions of this report. Among the features debuting this year are the reliability of commute times in various corridors (pages 12–15), and the percentage of peak-period toll bridge crossings paid electronically with FasTrak® toll tags (page 17). In addition, the figures for vehicle miles driven used in *State of the System 2006* include data from all of the Bay Area's freeways, highways, and local streets and roads. Previous editions focused exclusively on freeway miles driven.

In 2005, a strengthening Bay Area economy made its presence felt in several key transportation areas. Examples include:

- a 2 percent climb in vehicle miles driven on the region's freeways, highways, and local streets and roads (page 3);
- a 9 percent increase in congestion on the region's freeways — accelerating a trend that began in 2004, though overall congestion remains below the level experienced during the height of the Bay Area's economic boom in 2000 and 2001 (pages 8–11);
- a slight increase in the level of transit ridership across the region, the first such uptick in several years (pages 26–27).

On the safety front, we are happy to report that the number of motor vehicle collisions resulting in injuries or fatalities dropped again in 2005, the fifth straight year of decline (pages 30–31). And we note with some concern that despite a slight improvement in pavement conditions on the Bay Area's 19,000 miles of local streets and roads, 18 percent of the region's pavement is rated "poor" or worse, and fully one-third is rated only "good" or "fair" (pages 38–39).

We invite you to page through this issue of the *State of the System* report. We hope that you will find its contents informative and useful, and we welcome your comments as to both subject matter and presentation.

On behalf of the Metropolitan Transportation Commission and Caltrans District 4, we thank you for your interest in Bay Area transportation.

Sincerely,

Steve Heminger
Executive Director
Metropolitan Transportation Commission

Bijan Sartipi
District Director
Caltrans District 4


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The Transportation System in Brief

In 2005, the population of the nine-county Bay Area grew nearly 1 percent to almost 7.1 million. These residents were on the go, taking more than 21 million trips on an average weekday, or about three trips per person each day in order to get to work, school, shopping or other activities. More than 84 percent of all trips were by automobile. Walking and biking were the next most common ways to get around (10 percent of all trips); naturally, trips made by walking and biking tend to be shorter distances. About 6 percent of all trips were by public transit, and the majority of these trips occurred during commute hours. Over the course of the year, some 477 million transit trips were taken, and more than 57 billion miles were logged on the region's freeways, highways, expressways, and local streets and roads (see table below).

Bay Area residents' appetite for travel increased in 2005, reflecting a strengthening regional economy. Total vehicle miles driven rose by 2 percent. Regional employment increased in 2005, ending a four-year slide. The Bay Area's population continues to grow, nudging upward by 3 percent since 2001. And while the number of transit trips increased by 2 million, reversing three years of declining ridership, the total number of trips is still 10 percent below 2001 figures.

Long-term forecasts project a continuing rebound in both population and employment around the Bay Area. By 2030, the region's population is expected to grow to 8.8 million people, and employment will expand to 5.2 million jobs. MTC predicts the number of trips will grow to 28.5 million each day, increasing wear-and-tear and making other demands on Bay Area roads and transit. MTC's long-range transportation investment strategy for the region, adopted in 2005 as the *Transportation 2030 Plan,* addresses these growing needs by devoting 80 percent of the $118 billion in anticipated revenues over the 25-year planning horizon to basic maintenance needs and ongoing operations. Yet even this level of investment is not sufficient to fully address the Bay Area transportation network's projected maintenance needs. To meet increased travel demands, the *Transportation 2030 Plan* calls for 4 percent of the funds to be spent on low-cost operational improvements that squeeze more efficiency out of the

Population, Employment and Travel in the Bay Area, 2001–2005

	In Thousands					Percent Change	
	2001	2002	2003	2004	2005	2004–2005	2001–2005
Residents	6,917	6,956	6,994	7,064	7,093	+1%	+3%
Jobs	3,506	3,322	3,220	3,202	3,228	+1%	–8%
Vehicle Miles Driven	54,510,600	56,895,800	59,947,000	56,877,200	57,751,300	+2%	+6%
Transit Trips	533,038	515,556	478,587	475,016	477,240	+<1%	–10%

Sources: California Employment Development Department, California Department of Finance, Caltrans, Metropolitan Transportation Commission

Transit trips data is compiled by fiscal year, e.g., data listed for 2004 represents July 1, 2003–June 30, 2004.
Transit ridership data for fiscal year 2004-05 is provisional.

transportation system, and the remaining 16 percent on strategic expansion of the region's transit and roadway network.

California voters in November 2006 approved nearly $20 billion in bonds to improve transportation infrastructure statewide. Over the next decade, these bonds are expected to yield as much as $4.2 billion to $4.5 billion for transportation improvements around the Bay Area. Projects will encompass all modes of travel — ranging from upgrades to the regional highway network, to intercity rail improvements, to investments in the region's ports and freight infrastructure.

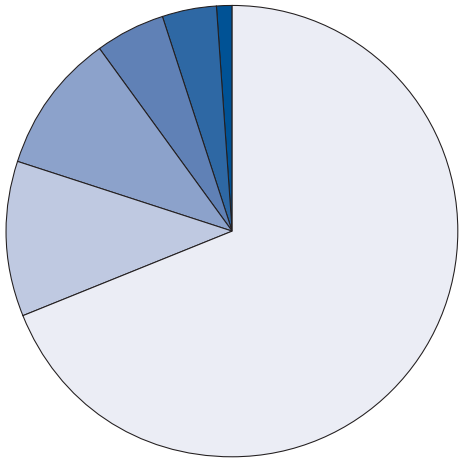
The Freeway System and State Highway System

The 57 billion miles of travel logged in 2005 by cars, trucks, buses and motorcycles on the Bay Area's roads and highways include more than 30 billion miles along the region's 620-mile freeway network. The freeway system includes 340 miles of "diamond lanes" that allow people in carpools, vanpools and buses to bypass congestion during peak commute hours. In 2005, carpool lanes carried 16 percent of the vehicles and 30 percent of the people in the peak commute hour on freeway segments with carpool lanes. This is a slight increase from 2004, when carpool lanes carried 29 percent of people in the peak commute hour, even though the percentage of vehicles driving in the carpool lanes remained flat at 16 percent.

A good portion of the region's freeway system is equipped with high-tech devices designed to increase freeway efficiency and better serve travelers. More than 450 miles of freeway are equipped with roadway sensors and video cameras that can detect slowdowns. Travelers also can check for freeway delays throughout the region and get point-to-point driving times by calling 511 or visiting the 511.org Web site. In addition, the roving tow trucks of the Freeway Service Patrol cruised along some 441 miles of the most congested freeways and expressways during the first six months of 2005, increasing to 458 miles for the second half of the year, helping motorists with car trouble, removing debris or quickly clearing accidents.

The region's freeway system is supplemented by approximately 800 miles of state highways. Most of these state-owned roadways are the major thoroughfares linking communities in the outer suburban and rural parts of the

How Bay Area Workers Commuted, 2005

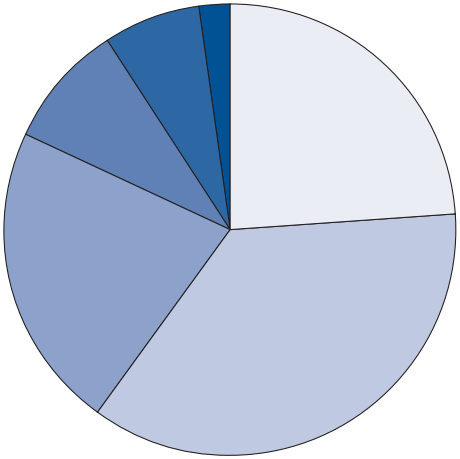


Drove Alone	**69%**
Carpooled	**11%**
Public Transportation	**10%**
Worked at Home	**5%**
Walked or Bicycled	**4%**
Other Means*	**1%**

Source: 2005 American Community Survey (U.S. Census Bureau)

*"Other Means" includes motorcycle and taxi.

Bay Area Commute Times, 2005: The Long and Short of It



0 to 14 minutes	**24%**
15 to 29 minutes	**36%**
30 to 44 minutes	**22%**
45 to 59 minutes	**9%**
60 to 89 minutes	**7%**
90 minutes or more	**2%**

Source: 2005 American Community Survey (U.S. Census Bureau)

Average (one-way) commute time for Bay Area workers in 2005: 26.9 minutes

Bay Area. These highways include State Routes 12, 29 and 37 in the North Bay, State Route 4 in eastern Contra Costa County, State Route 1 along the San Mateo County coastline, and State Route 152 in southern Santa Clara County. Some state highways run through the heart of urban areas and are indistinguishable to most travelers from locally owned urban roadways. Such roads include El Camino Real from San Jose to San Francisco (State Route 82) and San Pablo Avenue (State Route 123) from Oakland to Hercules in the East Bay.

Toll Bridges

Seven state-owned toll bridges and the Golden Gate Bridge grace the San Francisco Bay. In 2005, nearly 132 million vehicles crossed the seven state-owned toll bridges in the Bay Area, generating approximately $380 million in total toll revenues. While the majority of tolls are paid with cash, a growing number of travelers are using the FasTrak® electronic toll collection system, which has been in place on all transbay bridges since 2000. In 2005, the number of FasTrak® transactions passed 40 million.

The Local Roadway Network

Bay Area cities and counties own and maintain more than 19,000 centerline miles of local roadways, which must balance the needs of bicyclists and pedestrians as well as those traveling by buses and private automobiles. About half of the more than 7,000 traffic signals on the region's local roadway system are synchronized to reduce the time people spend waiting at red lights during weekday peak travel periods. The timing for about one-third of these signals recently has been updated to accommodate current traffic volumes, resulting in average reductions of 13 percent in travel time, 13 percent in fuel consumption, and 7 percent in mobile source emissions for the nearly 140 corridors that were retimed. In some major bus corridors, signals are programmed to give preferential treatment to buses that are running late so they can get back on schedule.

The Public Transit System

In fiscal year 2004-05, some two dozen Bay Area transit operators provided 186 million vehicle miles of

service and carried nearly 477 million passengers. Although the number of passengers rose, the split between types of transit service used stayed the same in fiscal year 2004-05. Buses continue to carry the majority of transit riders, transporting nearly two-thirds of all passengers while providing just under half of all service miles. The remaining third are carried on BART, commuter rail, light rail, ferries, and door-to-door vans and taxis that serve elderly and disabled riders (called paratransit service).

The Bay Area's transit operators were early leaders in making the region's buses, trains, ferries and light-rail vehicles accessible to persons with disabilities. Today, more than 90 percent of the region's buses and 95 percent of transit centers and rail stations are accessible to persons using wheelchairs

In an effort to improve transit efficiency and ease transferring between systems, MTC recently conducted a regional Transit Connectivity Study. This study of 21 Bay Area transit centers plus the region's three major airports identified a need to increase the amount, quality and consistency of information available to transit users at these sites. Among other things, the study recommended expanding the use of real-time signage and other helpful wayfinding aids, and these recommendations will be implemented at many transit centers over the next few years.

Pedestrian and Bicycle Facilities

The ability of residents to get around safely on foot or by bicycle is increasingly recognized as an essential factor in a neighborhood's quality of life. Also, there is a growing recognition that walking and cycling can help to promote healthier lifestyles and combat health conditions associated with decreasing levels of physical activity, such as obesity and diabetes.

The network used by bicyclists and pedestrians is ubiquitous. It includes the entire local roadway system, as well as sidewalks and some dedicated pathways. In addition, most buses and trains now accommodate bicycles. Bicycles and pedestrians are excluded from most freeways for reasons of safety, but access is provided on Bay Area toll bridges, either through bicycle lanes, special vans or transit service connections. Still, there are numerous locations without sidewalks or bicycle lanes, forcing bicyclists and pedestrians to share a lane with traffic. The safety of pedestrians and cyclists is a topic of increasing concern, and programs such as Safe Routes to School and other safety initiatives are being implemented by jurisdictions around the region.

Regionwide, bicycling accounts for 1 percent of all trips, and walking accounts for about 9 percent. However, for trips to school, bicycling accounts for about 4 percent of trips and walking for more than 20 percent.

Airports and Seaports

The Bay Area boasts three international airports (San Francisco, Oakland and San Jose) and four major seaports (Oakland, San Francisco, Redwood City and Richmond). The region's airports and seaports are gateways to the rest of the country and the world for tourism, business travel and trade. The Port of Oakland is the fourth-largest seaport in the nation in terms of container traffic and one of the only major U.S. ports that exports more than it imports. The Port of Oakland serves as the principal route for exports from the Central Valley as well as an entryway for goods from the Pacific Rim. The Port of Richmond is a major entryway for gasoline and oil products. All told, the Bay Area's airports and seaports handle nearly 58 million passengers, 1.5 million tons of air cargo, 2.3 million containers and 33 million tons of bulk cargo a year.

Mobility: Getting Around the Bay Area

Mobility can be defined as the ease of getting around. This section includes statistics describing how easy (or difficult) it was to get around the Bay Area on freeways, local roadways and public transit, as well as statistics on the number of vehicles and people that used each of these systems in 2005.

Congestion levels during the morning and evening commutes provide a key measure of mobility on Bay Area freeways. For the 2006 report, we have reported the average travel time for selected commutes, and for the first time have supplemented this data with information about the additional time travelers must allow in order to arrive on schedule 95 percent of the time (19 out of 20 trips). The report also presents separate statistics on travel time savings offered by carpool lanes, and the number of vehicles using carpool lanes.

Schedule adherence (on-time performance) is used to describe ease of travel on transit. To track transit usage, the report includes annual ridership statistics reported by transit operators to the Federal Transit Administration.

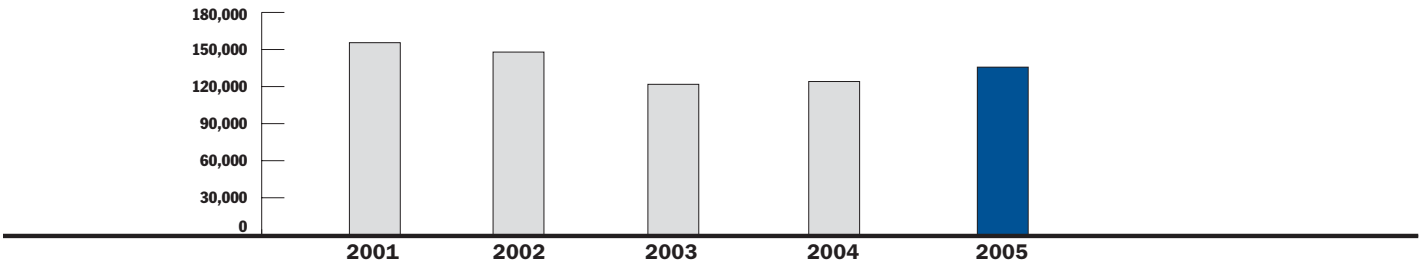
Measuring the ease of travel on the local road network is more challenging because the network is so extensive and is managed by nine separate counties and more than 100 different cities, most of which monitor local roadway congestion only in alternate years. Most jurisdictions use an indicator of congestion called "level of service," which corresponds roughly with traffic congestion.

Economic Growth Fuels Congestion Resurgence On Bay Area Freeways

- Traffic congestion during commute hours on Bay Area freeways rose by 9 percent in 2005. This was the second consecutive year in which the daily number of vehicle hours of delay due to congestion increased, following a modest 2 percent bump in 2004 and steady declines in congestion from 2001 through 2003.
- The increase in congestion likely reflects the increased level of economic activity in the Bay Area in 2005. The state Economic Development Department reported that some 26,000 new jobs were created in the nine-county region during 2005.

Daily (Morning and Evening Peak-Period) Freeway Delay by Bay Area County, 2001–2005

	Freeway Miles (2005)	Daily (Weekday) Vehicle Hours of Delay					Percent Change	
		2001	2002	2003	2004	2005	2004–2005	2001–2005
Alameda	138	65,600	61,300	46,300	50,500	52,300	+4%	–20%
Santa Clara	137	37,000	31,600	24,300	22,900	23,900	+4%	–35%
Contra Costa	87	18,800	19,400	18,700	18,500	21,600	+17%	+15%
San Francisco	19	8,500	11,400	11,200	8,900	10,700	+20%	+26%
Marin	28	7,900	8,400	6,200	7,400	9,800	+32%	+24%
San Mateo	73	10,900	7,700	7,300	7,800	7,600	–3%	–30%
Sonoma	55	4,400	4,400	5,200	5,300	7,100	+34%	+61%
Solano	79	2,400	3,700	2,600	2,800	2,700	–4%	+13%
Napa	5	0	0	0	0	0	NA	NA
Bay Area	**621**	**155,500**	**147,900**	**121,800**	**124,100**	**135,700**	**+9%**	**–13%**



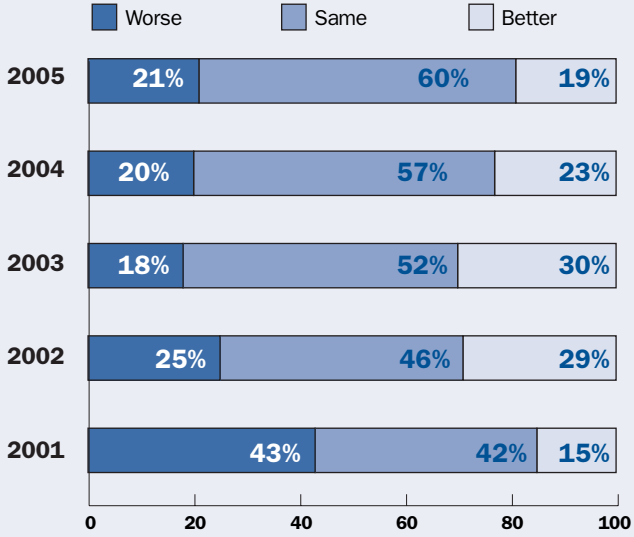
Sources: Metropolitan Transportation Commission, Caltrans District 4

- Regionwide, vehicles typically spent 135,700 hours per weekday in congested conditions (defined as average speeds below 35 miles per hour for 15 minutes or longer) on Bay Area freeways in 2005. While this marks a 9 percent jump over 2004 levels, it is far below the 177,600 hours per day recorded in 2000 at the height of the region's previous technology boom.
- The biggest overall increase in freeway congestion occurred in Contra Costa County, where in 2005 daily vehicle hours of delay grew by just over 3,000, to 21,600 hours each day. The biggest percentage increases came in Sonoma County, where daily vehicle hours of delay jumped by more than a third (to 7,100 in 2005 from 5,300 the year before) and Marin County, which showed a 32 percent surge in congestion in 2005. Smaller percentage increases were recorded in Alameda, Contra Costa, San Francisco and Santa Clara counties.
- Congestion declined slightly in 2005 in San Mateo and Solano counties, where vehicle hours of delay dropped 3 percent and 4 percent respectively from 2004 levels.

Top 10 Bay Area Congestion Hot Spots

- The morning approach to the Bay Bridge on Interstate 80 remained the region's most notorious congestion location in 2005, with the average daily vehicle hours of delay up 8 percent to 10,930 from 10,080 in 2004 (see page 10). Three of the Bay Area's 10 worst congestion locations involve the Bay Bridge, including the morning approach on Interstate 80 (a segment that also carries traffic headed toward eastbound Interstate 580 and southbound Interstate 880), the eastbound afternoon commute across the span (number 10) and the afternoon approach on eastbound Interstate 80 and northbound U.S. 101 in San Francisco (number 4).
- Interstate 580 in Alameda County is another corridor with multiple high-congestion segments. The afternoon drive from the Interstate 680 interchange eastbound past El Charro Road ranked second on the Bay Area conges-

Commuter Perceptions: Percent of Commuters Who Say Their Commute Is Better or Worse Than Last Year



Source: MTC Regional Rideshare Program

tion list for 2005, and the morning drive westbound from North Flynn Road at the top of the Altamont Pass to Airway Boulevard in Livermore came in at number 3. These routes swapped positions from the 2004 list.

- The only newcomer to the Top 10 list for 2005 is the eastbound afternoon commute along State Route 4 from Bailey Road in Pittsburg to the A Street/Lone Tree Way exit in Antioch (number 8). The westbound morning commute along State Route 4 from A Street/Lone Tree Way to west of Loveridge Road retained its position as the sixth-worst congestion hot spot in the Bay Area.

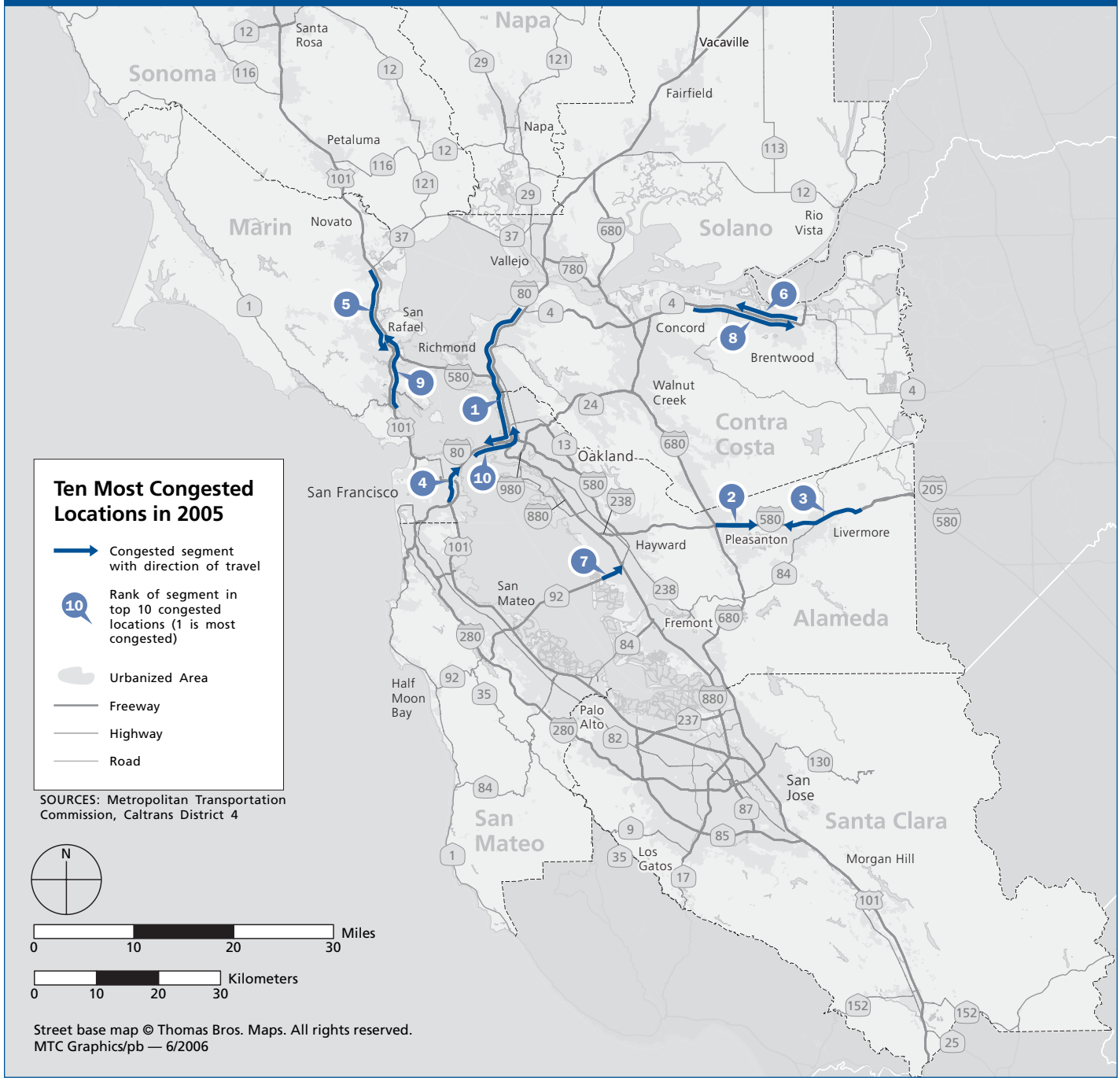
Bay Area Freeway Locations With Most Delay During Commute Hours, 2005

2005 Rank	Location	2005 Daily (Weekday) Vehicle Hours of Delay	2004 Rank	2003 Rank	2002 Rank	2001 Rank
1	**Interstate 80, westbound, a.m. —** Alameda/Contra Costa County *State Route 4 to Bay Bridge metering lights*	10,930	1	1	1	1
2	**Interstate 580, eastbound, p.m. —** Alameda County *Interstate 680 to east of El Charro Road*	6,100	3	3	3	4
3	**Interstate 580, westbound, a.m. —** Alameda County *West of North Flynn Road to Airway Boulevard*	5,830	2	3	5	12
4	**U.S. 101, northbound and Interstate 80, eastbound, p.m. —** San Francisco *U.S. 101 from Alemany Boulevard to I-80; I-80 from U.S. 101 to Sterling Street on-ramp*	5,140	4	2	4	8
5	**U.S. 101, southbound, a.m. —** Marin County *South of Route 37 to Interstate 580*	4,490	7	6	9	7
6	**Route 4, westbound, a.m. —** Contra Costa County *A Street/Lone Tree Way to west of Loveridge Road*	4,000	6	5	7	15
7	**Route 92, eastbound, p.m. —** Alameda County *Clawiter Road to Interstate 880 interchange*	3,880	5	15	35	11
8	**Route 4 eastbound, p.m. —** Contra Costa County *West of Bailey Road to A Street/Lone Tree Way*	3,780	13	17	20	19
9	**U.S. 101, northbound, p.m. —** Marin County *North of Marin City to Central San Rafael*	3,690	8	20	16	22
10	**Interstate 80, eastbound, p.m. —** San Francisco and Alameda counties *Yerba Buena Island to Emeryville*	3,120	10	18	37	34

Sources: Metropolitan Transportation Commission, Caltrans District 4

Rankings are for routes in which continuous stop-and-go conditions occur with few, if any, breaks in the queue. Thus, corridors that have equally severe delays, but where congestion is broken into several segments, may rank lower in this type of congestion listing.

Gridlock's Top 10, 2005



SOURCES: Metropolitan Transportation Commission, Caltrans District 4

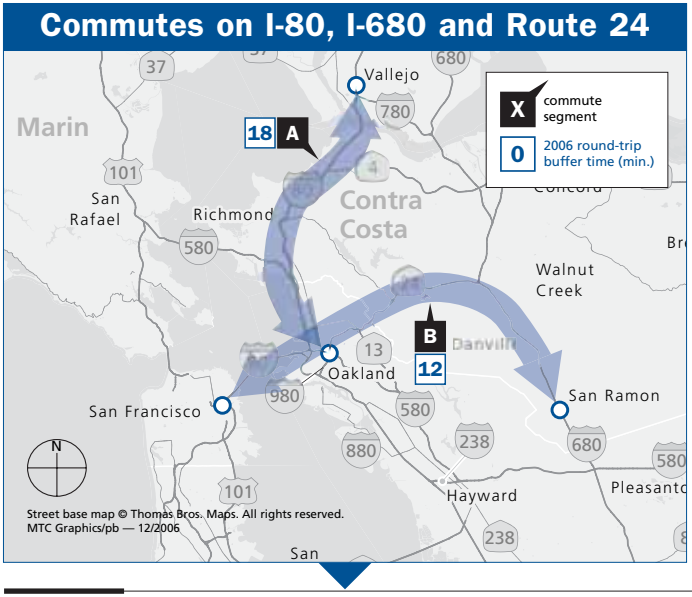
MTC Graphics/pb — 6/2006

Average Commute Times Remain Steady on Selected Routes, But Unpredictability Increases

State of the System 2006 reports for the first time on the reliability of driving commutes in the Bay Area. Veteran commuters know how long it usually takes to drive to or from their place of work. They also know to expect the unexpected. And to be reasonably sure of arriving on time, these drivers have learned to build a cushion into their schedules. The size of this cushion — or buffer time — is a measure of the reliability of a given commute. The smaller the buffer time, the more reliable the commute. Strategies such as freeway ramp-metering and prompt responses to collisions typically reduce buffer times.

Traffic speed data is collected by automated sensors in the freeway pavement throughout the course of a year. The speed data for typical weekdays (Tuesday, Wednesday, Thursday) can be used to gauge average start-to-finish driving times for seven typical Bay Area commutes, as well as the time needed to complete 95 percent (19 out of 20) of these peak-hour trips on schedule (95th percentile travel time). The difference between the two is the buffer time. Each of the monitored commutes begins or ends in one of the region's three largest cities (San Jose, San Francisco or Oakland). Future *State of the System* reports will provide a more complete picture of Bay Area commute reliability by encompassing a larger number of long-distance commute segments.

- For the seven round-trip commutes tracked in this year's report, average travel times were largely unchanged from 2004 through 2006. Notable exceptions were the commutes along U.S. 101 between San Jose and San Francisco, which lengthened during this period.
- Despite the relative stability in average driving times, commute reliability weakened from 2004 to 2006, with required buffer times rising on all but one of the seven monitored routes. Buffer times nearly doubled from 2004 to 2006 on the evening commute from San Jose to San Francisco (from 7 minutes in 2004 to 13 minutes in 2006). The round-trip buffer time for both legs of this commute (including the morning drive from San Francisco to San Jose) nearly doubled, rising to 22 minutes in 2006 from 12 minutes in 2004.
- The only commute segment on which reliability improved from 2004 to 2006 is the morning drive along U.S. 101 from San Jose to San Francisco, which required 10 minutes of buffer time in 2004 and just 8 minutes in 2006.

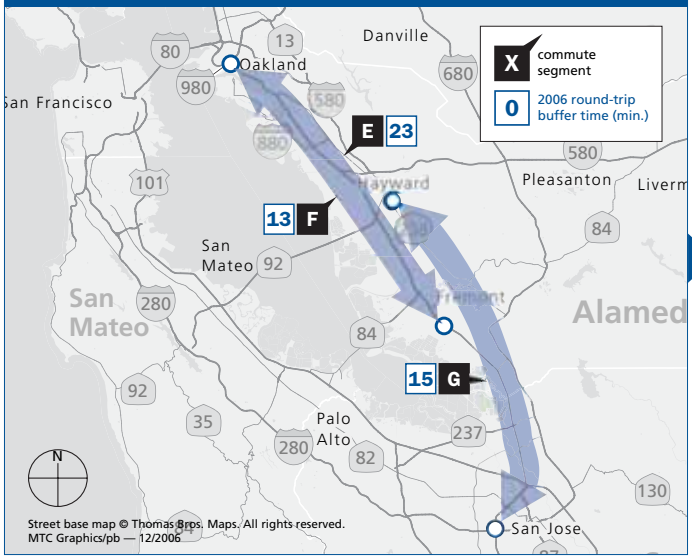


Reliability of Selected Commutes on Interstates 80 and 680 and Route 24

	Commute	Distance (One-Way)	Travel Time in Minutes 2004	2005	2006	Change in Minutes 2004–2006
95th Percentile, Average and Buffer Times for AM trips arriving at 8:30 AM and PM trips arriving at 6 PM						
A	**VALLEJO–OAKLAND**	*23 miles*				
	AM: Commute to Oakland - 95th percentile travel time		40	39	44	+4
	Average travel time		31	30	32	+1
	Buffer time		***9***	***9***	***12***	***+3***
	PM: Commute to Vallejo - 95th percentile travel time		38	40	40	+2
	Average travel time		33	32	34	+1
	Buffer time		***5***	***8***	***6***	***+1***
	Round-trip buffer time		***14***	***17***	***18***	***+4***
B	**SAN RAMON–SAN FRANCISCO**	*30 miles*				
	AM: Commute to San Francisco - 95th percentile travel time		44	44	46	+2
	Average travel time		40	39	40	0
	Buffer time		***4***	***5***	***6***	***+2***
	PM: Commute to San Ramon - 95th percentile travel time		NA	44	45	NA
	Average travel time		NA	37	39	NA
	Buffer time		***NA***	***7***	***6***	***NA***
	Round-trip buffer time		***NA***	***12***	***12***	***NA***

Commutes on U.S. 101 (Peninsula)

Commutes on I-880



Reliability of Selected Commutes on U.S. 101 (Peninsula)

	Commute	Distance (One-Way)	Travel Time in Minutes 2004	2005	2006	Change in Minutes 2004–2006
95th Percentile, Average and Buffer Times for AM trips arriving at 8:30 AM and PM trips arriving at 6 PM						
C	**SAN FRANCISCO–SAN JOSE**	*43 miles*				
	AM: Commute to San Jose - 95th percentile travel time		56	56	60	+4
	Average travel time		51	50	51	0
	Buffer time		***5***	***6***	***9***	***+4***
	PM: Commute to San Francisco - 95th percentile travel time		57	61	69	+12
	Average travel time		50	51	56	+6
	Buffer time		***7***	***10***	***13***	***+6***
	Round-trip buffer time		***12***	***16***	***22***	***+10***
D	**SAN JOSE–SAN FRANCISCO**	*43 miles*				
	AM: Commute to San Francisco - 95th percentile travel time		59	59	63	+4
	Average travel time		49	49	55	+6
	Buffer time		***10***	***10***	***8***	***–2***
	PM: Commute to San Jose - 95th percentile travel time		63	66	71	+8
	Average travel time		53	55	60	+7
	Buffer time		***10***	***11***	***11***	***+1***
	Round-trip buffer time		***20***	***21***	***19***	***–1***

Reliability of Selected Commutes on Interstate 880

	Commute	Distance (One-Way)	Travel Time in Minutes 2004	2005	2006	Change in Minutes 2004–2006
95th Percentile, Average and Buffer Times for AM trips arriving at 8:30 AM and PM trips arriving at 6 PM						
E	**FREMONT–OAKLAND**	*22 miles*				
	AM: Commute to Oakland - 95th percentile travel time		39	43	45	+6
	Average travel time		31	30	32	+1
	Buffer time		***8***	***13***	***13***	***+5***
	PM: Commute to Fremont - 95th percentile travel time		38	38	39	+1
	Average travel time		29	28	29	+0
	Buffer time		***9***	***10***	***10***	***+1***
	Round-trip buffer time		***17***	***23***	***23***	***+6***
F	**OAKLAND–FREMONT**	*22 miles*				
	AM: Commute to Fremont - 95th percentile travel time		30	30	31	+1
	Average travel time		26	24	26	0
	Buffer time		***4***	***6***	***5***	***+1***
	PM: Commute to Oakland - 95th percentile travel time		31	33	35	+4
	Average travel time		26	26	27	+1
	Buffer time		***5***	***7***	***8***	***+3***
	Round-trip buffer time		***9***	***13***	***13***	***+4***
G	**HAYWARD–SAN JOSE**	*25 miles*				
	AM: Commute to San Jose - 95th percentile travel time		39	41	42	+3
	Average travel time		33	32	34	+1
	Buffer time		***6***	***9***	***8***	***+2***
	PM: Commute to Hayward - 95th percentile travel time		NA	NA	37	NA
	Average travel time		NA	NA	30	NA
	Buffer time		***NA***	***NA***	***7***	***NA***
	Round-trip buffer time		***NA***	***NA***	***15***	***NA***

Source: Performance Measurement System 7.1, Caltrans

Buffer time is the amount of additional time one needs to allow in order to arrive on time 95% of the time (19 of 20 trips). The buffer time is the difference between the 95th percentile travel time and the average travel time.

Travel times reflect the average or 95th percentile for all trips, including those in the carpool lane. Travelers using the carpool lanes will generally experience shorter travel times than those shown, and those in other lanes may have slightly longer travel times.

FasTrak® Use Soars as Toll Bridge Traffic Continues Slide

- For the third straight year, average daily traffic on the Bay Area's eight toll bridges decreased slightly. Though 2005 traffic volumes on each bridge ran close to 2004 levels, the combined number of toll bridge crossings fell 1 percent. Toll bridge traffic volumes declined by 2 percent from 2001 to 2005.
- Traffic across the Bay Bridge into San Francisco decreased by 2 percent in 2005, while traffic across the Golden Gate Bridge into the city slipped by less than 1 percent. Reflecting overall economic trends, 2005 traffic volume on the Bay Bridge was 5 percent lower than 2001 levels, and Golden Gate Bridge traffic fell 6 percent over the five-year period. The largest percentage decrease from 2001 to 2005 was at the Dumbarton Bridge, where average daily traffic dropped 13 percent during this period. To a large extent, this decrease reflects the opening of a third lane on the San Mateo-Hayward Bridge in November 2002.
- Traffic on the Antioch Bridge increased 1 percent from 2004 to 2005, and climbed by 14 percent from 2001 to 2005. This reflects continued growth at the outer edge of the Bay Area and in adjacent counties. But the increase is small in absolute terms, since traffic volume on the Antioch Bridge is less than 10,000 vehicles a day.
- Growing numbers of motorists are opting to pay their tolls electronically with FasTrak® toll tags. More than 49 million vehicles used FasTrak® in 2005, representing 35 percent of all toll-paying crossings. During peak periods, 37 percent of vehicles crossing the seven state-owned bridges used FasTrak®.

Average Daily Traffic on Bay Area Toll Bridges (toll direction only), 2001–2005

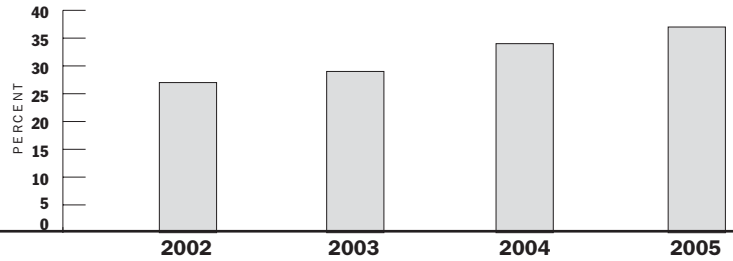
	Number of Vehicles					Percent Change	
Bridge	**2001**	**2002**	**2003**	**2004**	**2005**	**2004–2005**	**2001–2005**
San Francisco-Oakland Bay	136,600	137,000	134,700	133,000	129,900	–2%	–5%
Carquinez	62,200	64,100	64,000	64,000	62,900	–2%	+1%
Golden Gate	56,500	54,900	52,700	53,400	53,200	–<1%	–6%
Benicia-Martinez	49,400	50,800	51,000	50,600	50,400	–<1%	+2%
San Mateo-Hayward	41,200	42,000	44,700	45,700	45,900	+<1%	+11%
Richmond-San Rafael	35,400	35,900	35,800	34,800	34,700	–<1%	–2%
Dumbarton	34,400	33,000	30,500	30,100	29,800	–1%	–13%
Antioch	6,500	6,900	7,100	7,300	7,400	+1%	+14%
Total All Bridges	**422,200**	**424,600**	**420,500**	**418,900**	**414,200**	**–1%**	**–2%**

Sources: Bay Area Toll Authority; Golden Gate Bridge, Highway and Transportation District

- The Golden Gate Bridge, which offers a $1 discount for drivers who pay their tolls electronically, has the highest percentage of vehicles using FasTrak®. During the Golden Gate's two-hour peak period, as many as 70 percent of vehicles used the palm-sized toll tags in 2005. This percentage has held steady since 2003. Among the Bay Area's seven state-owned toll bridges, where the peak period is defined as five hours in the morning commute or four hours in the evening, the Dumbarton, Benicia-Martinez and Richmond-San Rafael bridges all had 40 percent or more of peak-period vehicles using FasTrak® in 2005.
- The Bay Bridge has experienced the largest increase in percentage of peak-period FasTrak® transactions, with a 15 percentage-point increase since 2002. There were over 14.5 million total FasTrak® crossings over the Bay Bridge in 2005.

FasTrak® Transactions as Share of Paid Peak-Period Crossings on Bay Area Toll Bridges, 2002 - 2005[1]

	Percent of Vehicles Using FasTrak®				Change in Percentage Points	
	2002	2003	2004	2005	2004–2005	2002–2005
Golden Gate[2] (a.m. peak)	69	70	70	70	0	+1
State-Owned Toll Bridges[3]						
Dumbarton (a.m. peak)	37	39	43	43	0	+6
Benicia-Martinez (p.m. peak)	29	30	35	42	+7	+13
Richmond-San Rafael (a.m. peak)	30	31	35	40	+5	+10
San Francisco-Oakland Bay (a.m. peak)	23	28	33	38	+5	+15
San Mateo-Hayward (a.m. peak)	28	32	37	38	+1	+10
Carquinez (p.m. peak)	28	28	32	34	+2	+6
Antioch (p.m. peak)	18	20	25	32	+7	+14
All State-Owned Bridges[4]	**27%**	**29%**	**34%**	**37%**	**+3**	**+10**



Sources: Golden Gate Bridge, Highway and Transportation District, Bay Area Toll Authority

[1] Figures do not include non-toll-paying vehicles (carpools, motorcycles or buses) or violators.

[2] The Golden Gate Bridge is operated by the Golden Gate Bridge, Highway and Transportation District. Annual figures are not an average, but rather represent the highest single-day percentage of vehicles using FasTrak® in a given year. The a.m. peak period is from 7 a.m. to 9 a.m.

[3] Figures represent the annual average percentage of vehicles using FasTrak® between the hours of 5 a.m. to 10 a.m. (a.m. peak) or 3 p.m. to 7 p.m. (p.m. peak).

[4] Figures represent a weighted average adjusted for actual vehicle volumes on each bridge.

Note: Chart at bottom of page is for State-Owned Toll Bridges only, and therefore does not include the Golden Gate Bridge data.

Carpool Lanes Deliver Big Time Savings in Key Commute Corridors

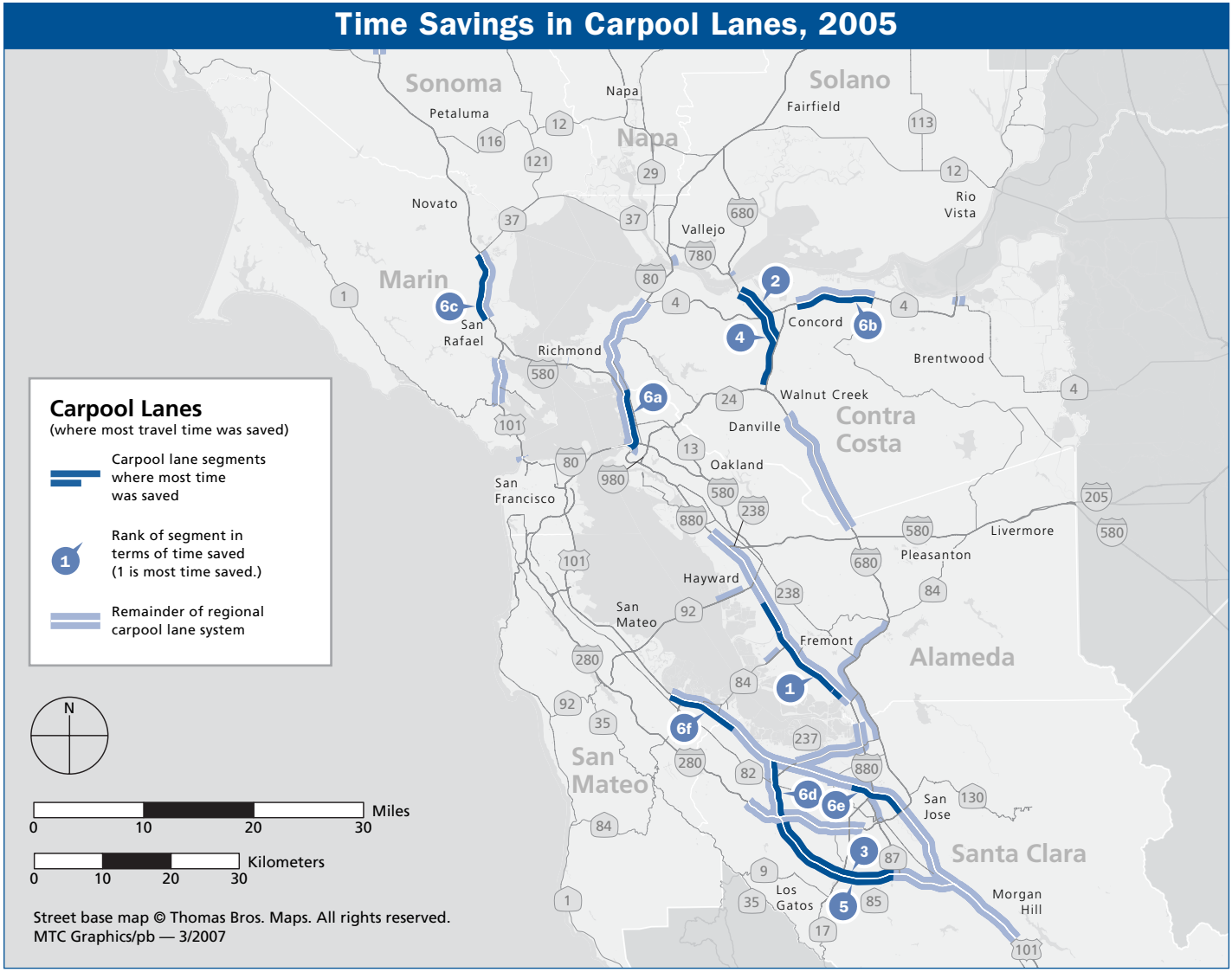
- Peak-hour carpoolers who use the Bay Area's network of high-occupancy vehicle (HOV) lanes consistently enjoy significantly faster commutes than drivers in adjacent mixed-flow lanes.
- The HOV lane on Interstate 880 in Alameda County continues to be the biggest timesaver for carpoolers during the southbound morning commute from Whipple Road in Hayward to Mission Boulevard in Fremont. These travelers saved an average 23 minutes in 2005, up from 19 minutes in 2004. Combined with the average eight minutes saved in the HOV lane from Marina Boulevard in San Leandro to Whipple Road, the southbound Interstate 880 carpool lane offers a 31-minute time advantage to commuters traveling the entire 19-mile distance.
- Two new HOV lane segments in Contra Costa County had strong debuts, offering carpoolers the second- and fourth-highest time savings in the region. The 4.4-mile segment of northbound Interstate 680 from State Route

Bay Area Carpool Lanes Where Most Time Was Saved, 2001–2005

		Minutes Saved per Vehicle in Peak Hour					Change in Minutes Saved	
Rank	Carpool Lane	2001	2002	2003	2004	2005	2004–2005	2001–2005
1	**Interstate 880, southbound, a.m.** — Alameda County *Whipple Road to Mission Boulevard (11.5 miles)*	40	40	20	19	23	+4	–17
2	**Interstate 680, northbound, p.m.** — Contra Costa Co. *Route 242 to Marina Vista (4.4 miles)*	NA	NA	NA	NA	18	NA	NA
3	**Route 85, northbound, a.m.** — Santa Clara County *Almaden Expressway to Interstate 280 (12.5 miles)*	16	9	13	12	17	+5	+1
4	**Interstate 680, southbound, a.m.** — Contra Costa Co. *Marina Vista to north of North Main Street (7.8 miles)*	NA	NA	NA	NA	16	NA	NA
5	**Route 85, southbound, p.m.** — Santa Clara County *Interstate 280 to Almaden Expressway (12.0 miles)*	15	11	12	14	15	+1	0
6a	**Interstate 80, eastbound, p.m.** — Alameda County *I-880 viaduct to Contra Costa County Line (5.3 miles)*[1]	9	10	5	8	12	+4	+3
6b	**Route 4, eastbound, p.m.** — Contra Costa County *Port Chicago Highway to west of Railroad Ave. (9.9 miles)*	2	2	8	6	12	+6	+10
6c	**U.S. 101, southbound, a.m.** — Marin County *Route 37 to N. San Pedro Road (6.1 miles)*	13	8	10	10	12	+2	–1
6d	**Route 85, northbound, a.m.** — Santa Clara County *Interstate 280 to U.S. 101 in Mountain View (5.4 miles)*	10	13	11	6	12	+6	+2
6e	**U.S. 101, southbound, p.m.** — Santa Clara County *Guadalupe Parkway to I-280/I-680 interchange (5.0 miles)*	12	12	12	12	12	0	0
6f	**U.S. 101, southbound, a.m.** — San Mateo County *Whipple Avenue to Santa Clara County line (6.9 miles)*	9	8	13	15	12	–3	+3

Source: Caltrans District 4

[1] In 2003 and 2004, this segment was called the "Port of Oakland to the Contra Costa County line (5.3 miles)." In 2001 and 2002, data was for a shorter, 4.2-mile segment from Powell Street to the Contra Costa County line.



242 to Marina Vista saved carpoolers 18 minutes in 2005. Those traveling southbound on the newly extended segment running from Marina Vista to North Main Street, a distance of 7.8 miles, had a 16-minute advantage over non-carpoolers.

- Carpoolers in HOV lane segments along both Interstate 880 and Interstate 80 leading to the Bay Bridge toll plaza got a smaller advantage in 2005 as travel times in the HOV lanes held steady and travel times in the adjacent mixed-flow lanes decreased. Conversely, the travel time advantage for carpoolers using the eastbound HOV lane segment along State Route 4 in Contra Costa County jumped by six minutes as increased congestion prompted a jump in mixed-flow travel times.

Carpool Lane Popularity Increases Slightly in 2005

- The most heavily used carpool lane segments in the Bay Area continued to be those on Interstate 80 in Alameda and Contra Costa counties, which accounted for the top four spots on the peak-hour carpool lane usage list. Westbound carpool lanes occupy the top three slots — not surprising given that the westbound morning commute from State Route 4 to the Bay Bridge once again ranked as the region's most congested commute. During the afternoon commute, the eastbound HOV lane on Interstate 80 from the I-880 interchange to the Contra Costa County line saw a 12 percent increase in the volume of peak-hour carpool vehicles in 2005, and a 27 percent increase since 2001.
- Seven of the 10 most heavily used carpool lane segments saw increased volumes in 2005, with Alameda and Contra Costa County holding eight of the 10 slots. Traffic volumes continued to decline in 2005 on two U.S. 101 carpool lane segments. This includes a 7 percent drop in carpool lane usage on U.S. 101 in Marin County and a 10 percent slide on U.S. 101 in Santa Clara County.

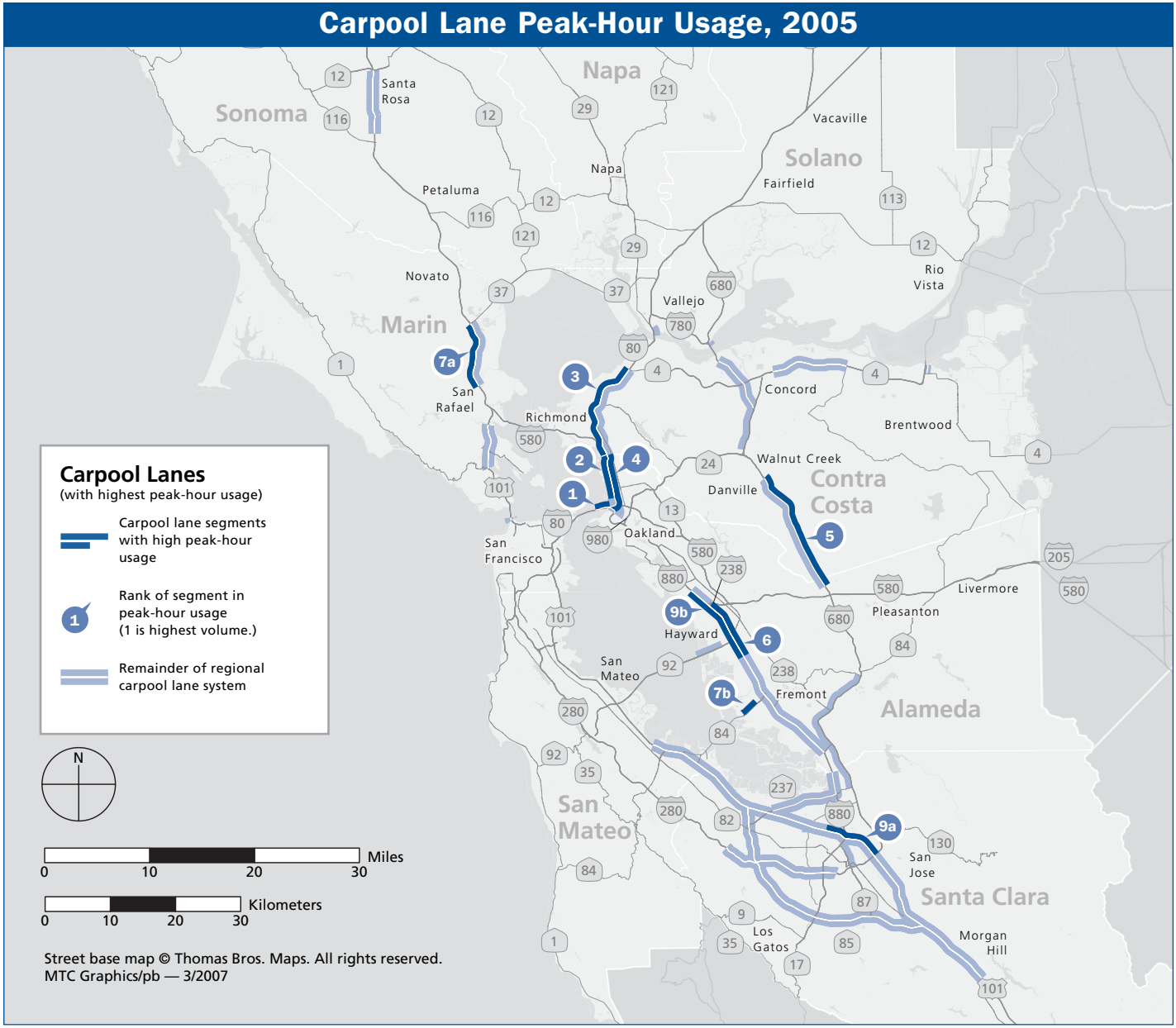
Bay Area Carpool Lanes With Highest Peak-Hour Usage, 2001–2005

		Peak-Hour Carpool Vehicles[1]					Percent Change	
Rank	Carpool Lane	2001	2002	2003	2004	2005	2004–2005	2001–2005
1	**Interstate 80, westbound, a.m. —** Alameda County *Bay Bridge toll plaza*	3,980	3,730	3,510	3,630	3,490	–4%	–12%
2	**Interstate 80, westbound, a.m. —** Alameda County *Contra Costa County line to Powell Street*	1,560	1,700	1,510	1,480	1,630	+10%	+4%
3	**Interstate 80, westbound, a.m. —** Contra Costa County *Route 4 to Alameda County line*	1,320	1,290	1,510	1,330	1,390	+5%	+5%
4	**Interstate 80, eastbound, p.m. —** Alameda County *I-880 viaduct to Contra Costa County line*	1,080	1,070	1,300	1,220	1,370	+12%	+27%
5	**Interstate 680, northbound, p.m. —** Contra Costa Co. *Alcosta Boulevard to Livorna Road*	1,380	1,370	1,270	1,250	1,350	+8%	–2%
6	**Interstate 880, northbound, p.m. —** Alameda County *Whipple Road to south of Interstate 238 interchange*	1,340	1,260	1,250	1,190	1,300	+9%	–3%
7a	**U.S. 101, southbound, a.m. —** Marin County *Route 37 to North San Pedro Road*	1,360	1,360	1,320	1,310	1,220	–7%	–10%
7b	**Route 84, westbound, a.m. —** Alameda County *Newark Boulevard to Dumbarton Bridge toll plaza*	1,350	1,230	1,040	1,180	1,220	+3%	–10%
9a	**U.S. 101, northbound, a.m. —** Santa Clara County *I-280/I-680 interchange to Guadalupe Parkway*	1,590	1,490	1,550	1,300	1,170	–10%	–26%
9b	**Interstate 880, southbound, p.m. —** Alameda County *Marina Boulevard to Whipple Road*	1,000	1,280	1,290	950	1,170	+23%	+17%

Source: Caltrans District 4

[1]Includes buses, vanpools and motorcycles

Carpool Lane Peak-Hour Usage, 2005

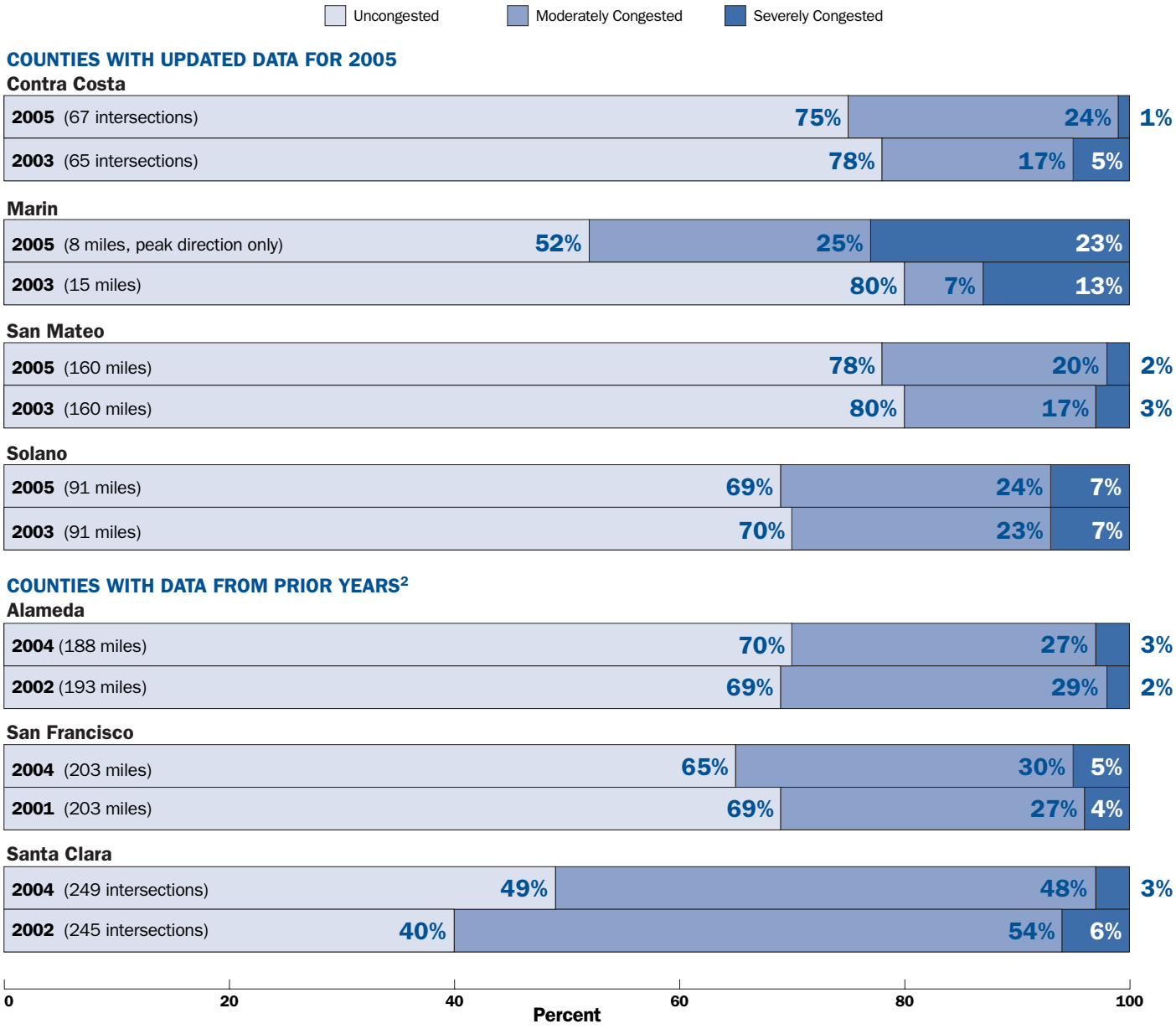


- Over the five-year period from 2001 to 2005, the number of peak-hour, carpool-lane vehicles declined in six of the 10 segments listed. This is consistent with the overall downward trend in congestion during this period. The carpool lane that stands out as the major exception is along eastbound Interstate 80 from the I-880 interchange to the Contra Costa County line.

More Congestion on Local Roads Around Bay Area

- Each of the four Bay Area counties that surveyed local roadway congestion in 2005 reported that the share of free-flowing roads during afternoon commute hours had declined relative to 2003. In all four counties, the percentage of roadways rated as "uncongested" decreased and the share of "moderately congested" roads increased. For the most part, though, the share of "severely congested" roads held steady or even decreased.
- Three counties — Alameda, San Francisco and Santa Clara — typically collect local congestion data in even-numbered years and thus did not report new figures in 2005. Based on 2004 data, Santa Clara County remains the only Bay Area county in which a majority (51 percent) of local roadways are classified as either moderately or severely congested. Congested roads typically account for about one-third of monitored roadway mileage in most other counties.
- Contra Costa County saw the share of moderately congested roads increase by seven percentage points) in 2005, while the share of severely congested roads declined by four percentage points. In all, 75 percent of the monitored roads in Contra Costa County were rated as uncongested, 24 percent earned a moderately congested designation, and just one percent had severe congestion.
- Changes in local roadway congestion in San Mateo and Solano counties were less marked. In San Mateo County, the share of moderately congested roads increased to 20 percent in 2005 from 17 percent, while the share of severely congested roads fell to 2 percent from 3 percent. In Solano County, the share of moderately congested roads increased just 1 percentage point from 23 percent in 2003 to 24 percent in 2005.
- Marin County reported a big increase in the percentage of roads described as moderately or severely congested in 2005. But this is due in large part to a change in the county's study method, with local roadway congestion in 2005 monitored only in the peak direction of travel. In absolute terms, the number of road miles described as moderately or severely congested increased just slightly, from three miles in 2003 to 3.8 miles in 2005.

Local Roadway Congestion by County[1] During the P.M. Peak Commute Period



Source: County congestion monitoring reports

[1] Selected road segments and/or intersections; Napa and Sonoma counties do not monitor local roadway congestion.
[2] Current (2005) data is not available for Alameda, San Francisco and Santa Clara counties.

Punctuality Improves for Several Operators

- VTA, Caltrain, BART and SamTrans continue to report the best on-time performances, with all four agencies operating on schedule more than 90 percent of the time. Caltrain's already high rate of on-time arrival rose from 92 percent in fiscal year (FY) 2003-04 to 97 percent in FY 2004-05.
- With a 91 percent on-time arrival record in FY 2004-05, SamTrans topped the 90 percent on-time threshold for the first time in nearly a decade. This represents the cumulative impact of several improvements over the past few years including implementation of a single, centralized fleet dispatch center from 8 a.m. to 5 p.m. on weekdays; staging stand-by buses at key locations so replacements are ready when buses break down; and adjusting schedules to reflect real conditions on the roadways.
- The on-time arrival rate for San Francisco Muni, which operates under some of the most challenging conditions in the Bay Area, significantly lags many of its peers. Muni

On-Time Performance of Seven Largest Bay Area Transit Operators, Fiscal Years 2000-01 – 2004-05

	Percent of Trips on Time by Fiscal Year					
	2000-01	2001-02	2002-03	2003-04	2004-05	2004-05 Goal
Buses						
Valley Transportation Authority (VTA)[1]	93%	95%	95%	97%	94%	95%
SamTrans[2]	85%	84%	84%	88%	91%	85%
Golden Gate Transit[3]	85%	87%	85%	82%	81%	90%
Muni (motor bus)[4]	63%	68%	70%	69%	73%	85%
Muni (electric trolley bus)[4]	64%	74%	74%	72%	70%	85%
AC Transit[5]	69%	74%	81%	66%	67%	90%
Rail						
VTA[6]	93%	84%	90%	96%	97%	95%
Caltrain[7]	86%	96%	95%	92%	97%	95%
BART[8]	92%	93%	92%	93%	92%	95%
Muni[4]	49%	66%	67%	66%	77%	85%

Sources: AC Transit, Golden Gate Transit, Muni, SamTrans, VTA, Caltrain, BART

Notes:

[1] No more than 5 minutes late
[2] No more than 5 minutes late; prior to 2001-02, no more than 5 minutes late or 1 minute early
[3] Less than 5 minutes late and 1 minute early (bus only); prior to 2001-02, no more than 5 minutes late.
[4] No more than 4 minutes late or 1 minute early
[5] Never early and no more than 5 minutes late
[6] No more than 3 minutes late
[7] Train arrived at the end of the station within 5 minutes of scheduled time
[8] Less than 5 minutes late at scheduled terminal stations

Peter Beeler

has pledged to focus on improvements and two of three Muni modes monitored posted significantly better on-time arrivals in FY 2004-05.

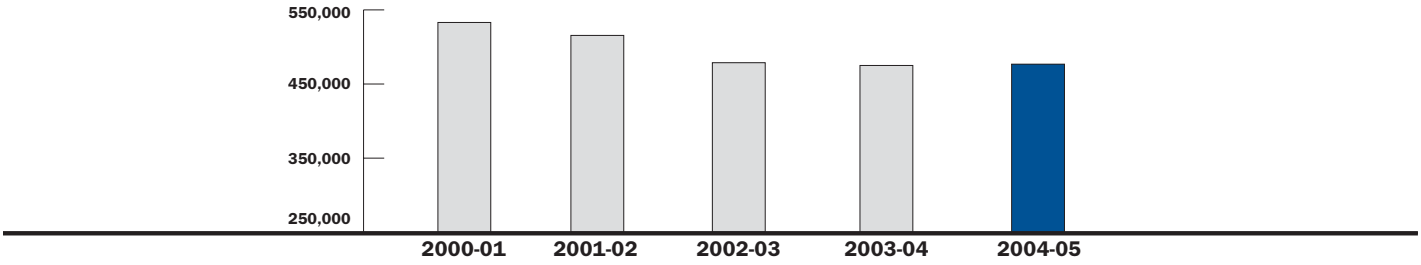
- The on-time arrival rate for Muni light-rail vehicles improved from 66 percent in FY 2003-04 to 77 percent in FY 2004-05, and the on-time arrival rate for motor buses rose from 69 percent to 73 percent. On-time arrivals for Muni's electric trolley buses dropped slightly from 72 percent to 70 percent.
- With an improvement from 66 percent on-time in FY 2003-04 to 67 percent on-time in FY 2004-05, AC Transit appears to be heading in the right direction. However, AC Transit's rate of on-time arrival still lags below levels achieved in recent past years.
- Two bus operators posted small decreases in on-time performance. Golden Gate Transit's on-time record dropped one percentage point from 82 percent in FY 2003-04 to 81 percent in FY 2004-05. This continues a slow decline in on-time performance over the past five years. While VTA's on-time record dropped from 97 percent in FY 2003-04 to 94 percent in FY 2004-05, the system still boasts the highest on-time rate among the region's major bus operators.

Transit Ridership Halts Three-Year Slide With Slight Increase for 2004-05

- For the first time since fiscal year (FY) 2000-01, Bay Area transit ridership showed a slight increase in FY 2004-05, with nearly 2 million more passenger boardings on the region's buses, trains, ferries and light-rail vehicles. Overall, Bay Area transit ridership grew less than 1 percent to 477 million passengers in FY 2004-05, but this follows declines of 3 percent in FY 2001-02, 7 percent in FY 2002-03 and 1 percent in FY 2003-04. And while ridership is still down 11 percent since FY 2000-01, the slight increase in FY 2004-05 suggests that passenger volumes have stabilized and may be poised for an upswing in future years.
- Caltrain saw the most dramatic ridership gain in FY 2004-05, an increase of 15 percent. Caltrain boosted

Ridership on Bay Area Transit Systems by Operator, Fiscal Years 2000-01 – 2004-05

	Thousands of Annual Boardings					Percent Change	
Operator	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2003-04–2004-05**	**2000-01–2004-05**
Muni	236,205	234,303	216,947	217,049	218,205	+1%	–8%
BART	103,919	97,351	93,799	98,026	99,516	+2%	–4%
AC Transit	71,529	69,531	62,755	64,906	65,076	+<1%	–9%
Valley Transportation Authority	58,160	53,710	46,864	39,776	38,486	–3%	–34%
SamTrans	18,136	17,387	16,859	15,064	14,510	–4%	–20%
Golden Gate Transit	11,618	10,676	10,261	9,789	9,466	–3%	–19%
Caltrain	9,925	8,138	7,870	8,015	9,185	+15%	–7%
Other Operators	23,546	24,460	23,232	22,391	22,438	+<1%	–5%
Total – All Operators	**533,038**	**515,556**	**478,587**	**475,016**	**476,882**	**+<1%**	**–11%**



Sources: Metropolitan Transportation Commission and transit operators

Data for fiscal year 2004-05 is provisional.

revenue miles during this period 22 percent, focusing on the "Baby Bullet" express service between San Francisco and San Jose.

- For the second year in a row, ridership on the three largest operators (Muni, BART and AC Transit) all showed very minor increases in terms of percentage. These three operators account for 80 percent of all transit trips in the region.
- Although still experiencing declines in ridership, mid-sized operators such as VTA, SamTrans and Golden Gate Transit fared better in FY 2004-05 than in the past few years, with the rate of decline slowing to 3 percent for both VTA and Golden Gate Transit, and 4 percent for SamTrans. SamTrans and VTA both made minor service cuts in FY 2004-05, while Golden Gate's revenue miles decreased nearly 12 percent in the same period.

A Closer Look at Top 10 Ridership Bus Routes, by Boardings

- There is a large degree of year-to-year consistency in the list of the most heavily used Bay Area bus routes.
- Significantly, the number one and two routes carry more than twice as many passengers on an average weekday as the number nine and 10 routes.
- In FY 2004-05, eight of the top 10 bus routes were operated by San Francisco Muni, which also boasts the largest ridership among all Bay Area transit operators.

Top 10 Bay Area Bus Routes, by Boardings

Rank	Route	Average Weekday Boardings FY 2004-05	FY 2003-04 Rank
1.	SF Muni: 38 Geary	51,100	1
2.	SF Muni: 14 Mission	47,100	2
3.	SF Muni: 30 Stockton	31,200	4
4.	SF Muni: 15 Third St.	30,400	7
5.	SF Muni: 1 California	29,900	6
6.	SF Muni: 9 San Bruno	28,600	3
7.	SF Muni: 49 Van Ness/Mission	26,200	5
8.	SF Muni: 22 Fillmore	22,800	10
9.	AC Transit: 40/40L/43 Telegraph/Foothill	19,900	NA
10.	AC Transit: 51 Broadway	18,600	NA

Sources: Muni, AC Transit

Safety

One of the goals of MTC's long-range *Transportation 2030 Plan* is to improve safety for all users of the transportation system — drivers and passengers, transit users, bicyclists and pedestrians.

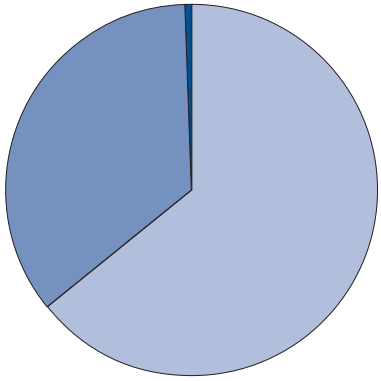
This report uses statistics on injury and fatal collisions to gauge roadway safety. The most widely used safety information on motor vehicle (automobile, truck or motorcycle) collisions with other motor vehicles, as well as collisions with bicyclists and pedestrians comes from data assembled by the California Highway Patrol.

With respect to transit, the Federal Transit Administration has shifted to a reporting system that requires transit operators to submit more frequent and more comprehensive reports on transit safety. While the new requirements promise ultimately to improve the quality of information, authoritative data is not yet available. We hope to include transit safety data in future *State of the System* reports.

Number of Injury and Fatal Collisions Drops for Fifth Straight Year

- The total number of reported injury and fatal motor vehicle collisions in the Bay Area fell 1 percent in 2005, continuing a trend that stretches back to 2001. Over the past five years, the total number of injury and fatal collisions has decreased 13 percent regionwide.
- Despite the slight drop in the combined number of injury and fatal motor vehicle collisions, the number of fatal collisions increased 3 percent in 2005.
- Fortunately, most motor vehicle collisions do not result in injuries or fatalities. In 2005, 64 percent of collisions involved property damage only, which is in line with prior years. Approximately 35 percent of collisions resulted in injuries, and about one-half of one percent caused fatalities.

Motor Vehicle Collisions in the Bay Area In 2005: Fatal, Injury, Property Damage

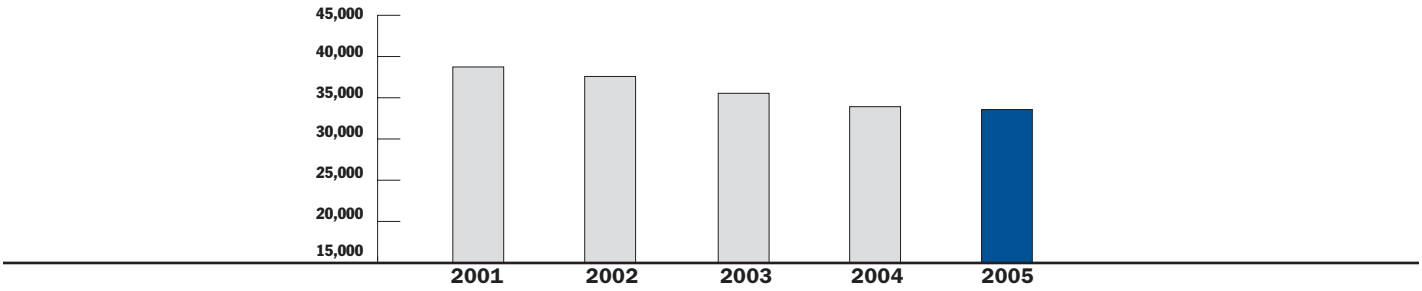


Fatal Collisions	**0.5%**
Injury Collisions	**35.2%**
Property Damage Only Collisions	**64.3%**

Source: California Highway Patrol
95,202 collisions = 100%

Injury and Fatal Collisions on Bay Area Roadways, 2001–2005

	Collisions					Percent Change	
	2001	2002	2003	2004	2005	2004–2005	2001–2005
Injury Collisions	38,322	37,167	35,089	33,524	33,185	–1%	–13%
Fatal Collisions	449	451	468	426	438	+3%	–2%
Total Injury and Fatal Collisions	**38,771**	**37,618**	**35,557**	**33,950**	**33,623**	**–1%**	**–13%**

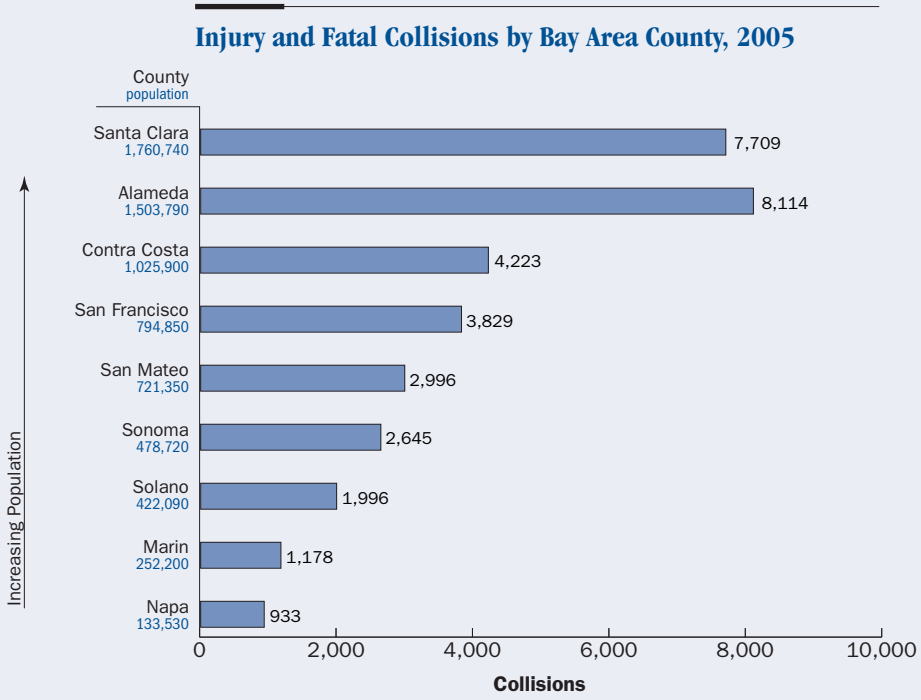


Source: California Highway Patrol

- The 95,202 reported collisions (including those resulting in injury, fatality or property damage) in 2005 represented a 1 percent drop from 2004, when 96,069 collisions were reported.

- Several key factors influence the number of collisions. These include: driver education and behavior, vehicle safety features, roadway conditions, traffic congestion and total number of miles driven. Studies suggest that while freeway driving accounts for approximately 60 percent of all miles driven in the Bay Area, only about 25 percent of all collisions occur on freeways.

A Closer Look – We can get a rough idea of the geographic distribution of injury and fatal collisions by breaking them out by county of occurrence. In general, a given county's share of collisions correlates closely with its size, as measured by population (see bar graph). The greatest number of collisions occurs in Alameda County, though it ranks second to Santa Clara County in terms of population. This is probably explained by the fact that Alameda is a "crossroads" county, within whose borders a significant number of vehicle miles of travel are logged each year — both by its own residents and those from other counties.



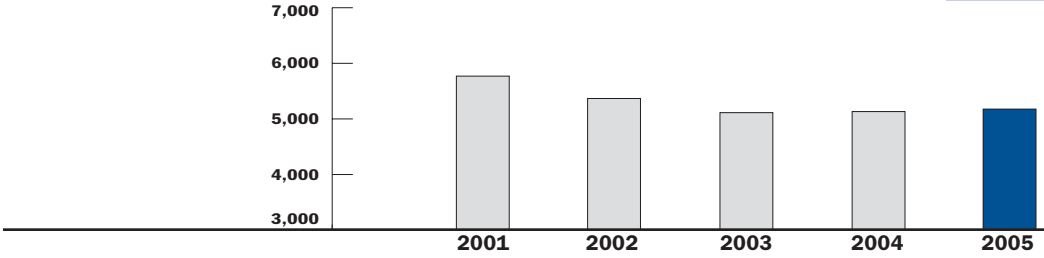
Sources: California Highway Patrol, California Department of Finance

Number of Collisions Involving Bicyclists or Pedestrians Increases Slightly

- In 2005, the number of injury and fatal motor vehicle collisions involving bicyclists or pedestrians varied little from the totals reached in each of the two years preceding. The 5,175 pedestrian and bicycle collisions reported throughout the Bay Area in 2005 represent an increase of just 50 collisions compared to 2004. Each year since 2002, there have been fewer than 5,500 injury or fatal motor vehicle collisions involving bicyclists or pedestrians.
- Fatal collisions were five times more likely to involve pedestrians than cyclists. This is similar to years past, and reflects the fact that walking is a more common form of transportation than bicycling. In 2005, there were 105 fatal collisions involving pedestrians and 17 fatal collisions involving bicyclists.
- The 5,175 injury and fatal collisions involving pedestrians or cyclists represent 15 percent of the 33,623 injury and fatal motor vehicle collisions that occurred in 2005 (see previous section). But the 122 fatal collisions involving pedestrians and cyclists represent a disproportionate 28 percent of all fatal motor vehicle collisions.
- These data include only motor vehicle collisions reported to law-enforcement authorities. There may be a significant number of injury collisions involving pedestrians and cyclists that are not reported.

Injury and Fatal Motor Vehicle Collisions Involving Pedestrians or Bicyclists, 2001–2005

	Collisions					Percent Change	
	2001	2002	2003	2004	2005	2004–2005	2001–2005
Collisions Involving Pedestrians							
Injury Collisions	3,080	2,910	2,740	2,648	2,677	+1%	–13%
Fatal Collisions	103	111	104	100	105	+5%	+2%
Subtotal	3,183	3,021	2,844	2,748	2,782	+1%	–13%
Collisions Involving Bicyclists							
Injury Collisions	2,566	2,321	2,254	2,357	2,376	+1%	–7%
Fatal Collisions	20	19	14	20	17	–15%	–15%
Subtotal	2,586	2,340	2,268	2,377	2,393	+1%	–7%
Total Involving Bicyclists or Pedestrians	**5,769**	**5,361**	**5,112**	**5,125**	**5,175**	**+1%**	**–10%**



Source: California Highway Patrol

A Closer Look – In the absence of better data about how much people are walking and bicycling in the Bay Area, we can look for patterns based on population by jurisdiction. As with data on all collisions, there appears to be a strong correlation between population rank and rank in pedestrian- and bicycle-involved motor vehicle collisions. (For this reason, there is a great deal of consistency from year to year in the jurisdictions with the highest number of pedestrian- and bicycle-involved collisions, with the largest cities – San Francisco, Oakland and San Jose consistently reporting the highest number of collisions.) There are some notable exceptions that may be explained by factors such as travel patterns, demographics and daytime population (workers or students).

- Berkeley, which is the 15th-largest Bay Area city in terms of population, ranks fourth in both pedestrian and bicycle-involved collisions. This likely reflects the high level of walking and cycling in this university-centered community. Berkeley also has a higher daytime population due to the university, which attracts large numbers of students and workers.
- The city of Vallejo ranks 12th in terms of population but fifth for collisions involving pedestrians. Compared to other Bay Area communities, Vallejo has a greater percentage of youth under 18 and a greater share of people living in poverty. Both factors tend to correlate with a higher level of pedestrian activity.

Injury and Fatal Motor Vehicle Collisions Involving Pedestrians And Bicyclists by Bay Area Jurisdiction, 2005

PEDESTRIANS

2005 Rank	Jurisdiction	Total 2005	Annual Average 2000–2004	Rank in Population
1	San Francisco	759	862	2
2	San Jose	323	336	1
3	Oakland	303	311	3
4	Berkeley	98	119	15
5	Vallejo	52	55	12
6	Fremont	51	54	4
7	Hayward	47	69	8
8	Santa Rosa	46	53	14
	Fairfield	46	41	6
10	Richmond	45	53	17

BICYCLISTS

2005 Rank	Jurisdiction	Total 2005	Annual Average 2000–2004	Rank in Population
1	San Francisco	351	335	2
2	San Jose	289	295	1
3	Oakland	139	127	3
4	Berkeley	115	134	15
5	Palo Alto	86	66	35
6	Concord	63	42	11
7	Santa Rosa	57	68	6
8	Napa	48	38	24
9	Hayward	44	45	8
10	Sunnyvale	43	45	10

Sources: California Highway Patrol, California Department of Finance

- Palo Alto ranks much higher in terms of bicycle-involved collisions (fifth) than in population (35th). Palo Alto has a large daytime population due to Stanford University and its residents are more likely than those of other Bay Area cities to commute to work by bicycle, according to data collected by the 2000 U.S. Census.

State of Repair

The state of repair of freeways, local roadways and transit affects travelers in two respects. The more obvious impact is on the quality of travel. The second impact, which is not directly reflected in the indicators in this report, relates to cost. When roadways and transit vehicles are allowed to fall into disrepair, it usually ends up costing more to repair them than it would have cost to perform routine maintenance — just as deferring maintenance on a house often results in a more expensive repair.

For freeways and local roadways, pavement condition is used as an indication of the state of repair. The condition of the transit system is measured by the average distance vehicles are driven between vehicle breakdowns that cause a disruption in service; the unscheduled repairs are known as service breakdowns.

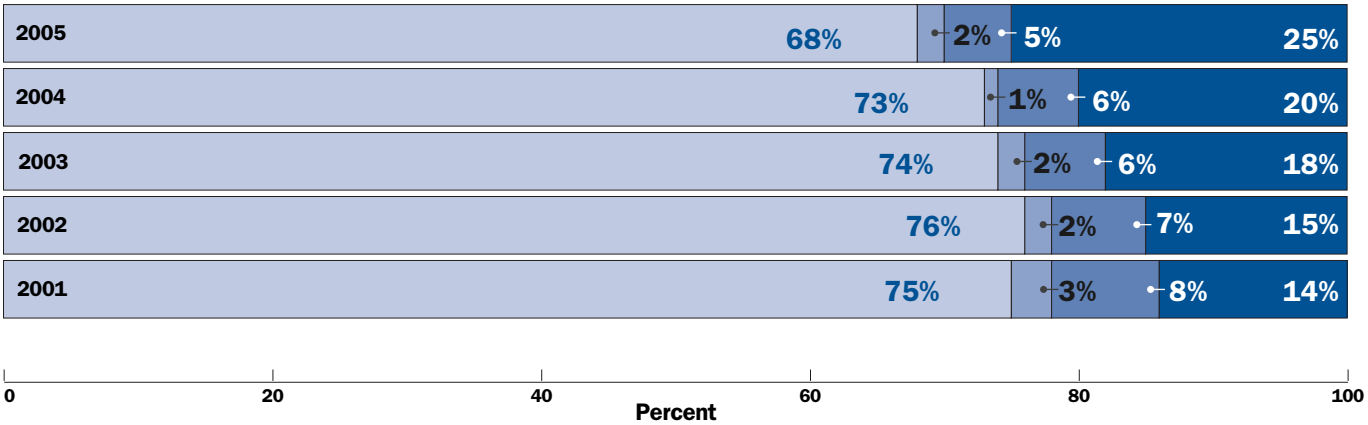
Condition of Pavement on State Highways Worsens in 2005; One-Quarter of Roadway Miles Show Signs of Major Structural Distress

- Pavement condition deteriorated on state highways in the Bay Area in 2005, as the share of roads with no distress slipped five percentage points to 68 percent, and the portion showing major structural distresses rose five percentage points to 25 percent.
- At 68 percent, the share of roads with no distress is at its lowest point in the last five years. At the other end of the scale, the percentage of roadway miles showing major structural distress — 25 percent — is at its highest point in five years. Fully one-quarter of the lane miles on Bay Area state highways now show signs of serious damage, whereas as recently as 2001, just one mile in seven fell into this category.

Note:

State-owned roadways are commonly called state highways and include freeways, rural highways (such as Route 1 along the Pacific Coast, Route 29 in Napa and Route 116 in Sonoma) and state-owned urban and suburban arterials (such as San Pablo Avenue in Alameda and Contra Costa counties and Skyline Boulevard in San Mateo County).

Pavement Conditions for State Highways in the Bay Area, 2001–2005



No Distress

Poor Ride Quality Only
Pavements that exhibit moderate potholes and cracks, and can be treated with 1" to 2" thick overlays.

Minor Structural Distress
Pavements that exhibit poor condition with significant cracks. These pavements are candidates for rehabilitation.

Major Structural Distress
Pavements that exhibit poor condition with extensive cracks; often require reconstruction.

Source: Caltrans

Includes state-owned freeways and non-freeway roadways. Excludes state-owned bridges.

Total Bay Area lane miles in 2001, 2002, and 2003 was 5,960. Total in 2004 and 2005 was 5,980.

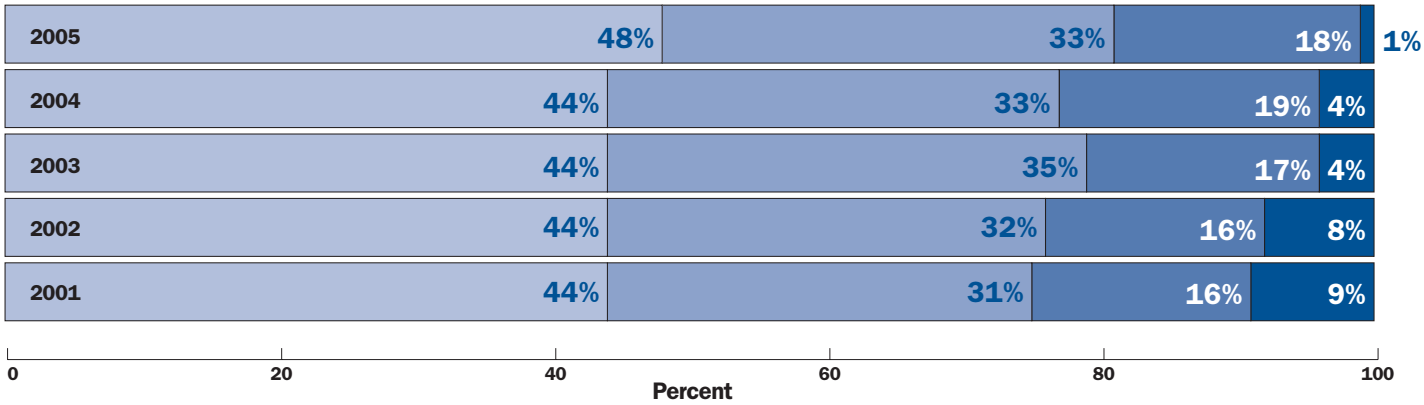
- The state has not been able to sustain investments in road repair following a big infusion of cash in fiscal year 2000-01 to repair damaged roads and perform preventive maintenance. That sizable one-time investment appreciably improved the condition of state highways in the region. From 2000 to 2001, the share of roadways showing no distress jumped to 75 percent (from 64 percent), and the percentage of roadways with major structural distress fell to 14 percent (from 25 percent). But since then, the share of roads in this latter group has risen every year, culminating in the five-percentage-point jump from 2004 to 2005.

- The $19.9 billion transportation bond (Proposition 1B) passed by voters in November 2006 includes $500 million for state highway maintenance. Caltrans plans to use this money to accelerate repair work on some of the neediest and costliest state highway segments in California. But this infusion of new funds is not enough to significantly improve roadway conditions overall.

Pavement Index Shows Modest Improvement, But Bay Area Pavement Quality Remains in Danger Zone

- The region's average pavement condition index (PCI) score last year rose two points to 64 out of a maximum possible 100. The uptick reverses a three-year slide in average PCI scores. But despite this slight improvement in 2005, 18 percent of the Bay Area's nearly 19,500 centerline miles of local streets and roads are in "poor" or worse condition, and fully one-third is rated only "good" or "fair."
- The region's average PCI score continues to hover around 60, which is the point when pavement begins deteriorating rapidly. This puts pressure on cities and counties to invest in both preventive maintenance to keep the good roads above 60 and in rehabilitation to bring poorer roads out of the danger zone. Projections made for the Bay Area's long-range *Transportation 2030*

Pavement Conditions for Local Roadways, 2001–2005 (total miles)[1]



Excellent (PCI = 90–100) or Very Good (PCI = 75–89)
Pavements that have no distress and require mostly preventive maintenance

Good (PCI = 60–74) or Fair (PCI = 45–59)
Pavements in this middle range offer acceptable ride quality, though road surfaces are becoming worn to the point where rehabilitation is needed to prevent rapid deterioration.

Poor (PCI = 25–44) or Very Poor (PCI = 0–24)
Pavements that have extensive amounts of distress and require major rehabilitation or reconstruction

No Data

2005 Bay Area PCI = 64
The regional PCI score is an average of the scores of all participating jurisdictions, weighted by lane miles.

Source: Metropolitan Transportation Commission

98 cities and nine counties reporting

PCI = pavement condition index, a measure of pavement distress

64 of 107 jurisdictions provided updated databases to MTC for 2005. For other jurisdictions, MTC used its pavement management system software to project 2005 conditions based on the latest data available.

[1] For the years 2001 through 2004, pavement condition was calculated based on centerline miles. For 2005, pavement condition was calculated based on lane miles.

Plan, adopted in 2005, show that between now and 2030, the Bay Area's cities and counties face a combined shortfall of more than $6 billion for maintaining and restoring local streets and roads.

- Fortunately, Propositions 1A and 1B, passed by California voters in November 2006, will help bridge some of this funding gap. Proposition 1A closed a loophole that allowed the state Legislature to divert funds away from transportation, while Proposition 1B — the $20 billion transportation infrastructure bond — will deliver about $375 million over 10 years for local street and roads in the Bay Area.

A Closer Look

- Cities with the best and worst average pavement conditions in 2005 are shown below. Often a jurisdiction's low average pavement condition rating is the result of a roadway maintenance budget that is insufficient to cover a backlog of needs.
- No Bay Area city or county scored in the excellent range for 2005. The top-ranked jurisdiction is the Contra Costa County city of Oakley, where the PCI on local streets averaged 86, up two points from 2004. The lowest-ranked pavement was found in unincorpo-rated Sonoma County, which for the second consecutive year recorded an average PCI score of 44.
- The San Mateo County city of Colma logged the biggest year-to-year improvement in 2005, with its average PCI score jumping 31 points to 78. About one-quarter of Colma's nine miles of city streets received a new asphalt overlay in 2005. (The complete 2005 rankings of Bay Area PCI scores can be found in Appendix D.)

Bay Area Jurisdictions With Best and Worst Pavement Conditions, 2005

Best		2005 PCI[1] (out of 100)
1.	Oakley	86
2.	Los Altos	85
3.	Contra Costa County (unincorporated)	83
	Dixon	83
	Sunnyvale	83
6.	City of Santa Clara	82
	Emeryville	82
	Foster City	82
9.	Brentwood	81
	Gilroy	81

Worst		2005 PCI[1] (out of 100)
97.	Napa County (unincorporated)	53
	Suisun City	53
99.	Oakland	52
100.	City of Napa	51
	El Cerrito	51
	Rio Vista	51
103.	Larkspur	50
104.	Orinda	48
105.	Marin County (unincorporated)	47
	Richmond	47
107.	Sonoma County (unincorporated)	44

Source: Metropolitan Transportation Commission

107 of 109 jurisdictions reporting

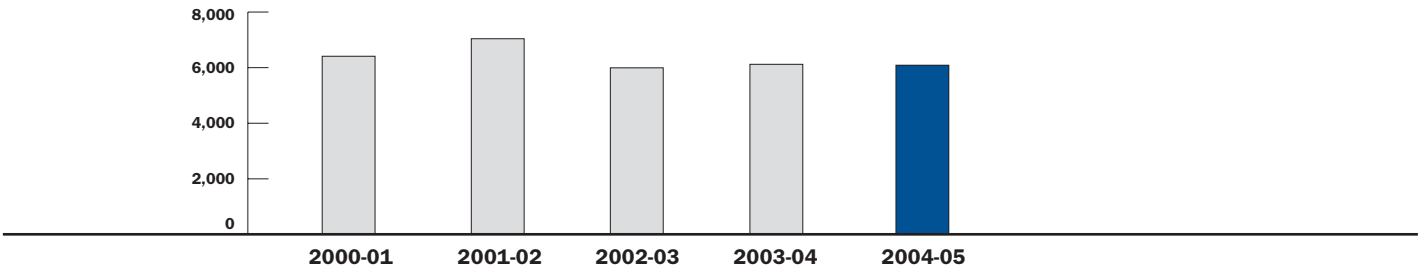
[1] PCI = pavement condition index; PCI of 100 = Excellent

Rail Reliability Improves Significantly, But Technical Difficulties Hurt Bus Performance

- The Bay Area's rail operators reported a major improvement in a key measure of reliability in fiscal year (FY) 2004-05. The average distance traveled between service calls for rail increased 30 percent, to 7,890 miles. Meanwhile, the average distance traveled between bus service calls decreased 7 percent, in large part due to difficulties operators had with new technology buses. A service call occurs when a bus or train requires repair and cannot complete scheduled service.
- The decrease in the number of miles traveled by buses between service calls was largely due to decreases in reliability for Muni and Golden Gate Transit service. Golden Gate was plagued with difficulties related to new technology buses designed to reduce bus emissions. The new fleet ran into major service reliability problems in 2005, but many of these issues appear to be rectified now. Muni experienced similar problems with new, low-emission buses in 2005.

Service Calls — Six Largest Bay Area Transit Operators, Fiscal Years 2000-01 – 2004-05

	Average Miles Between Service Calls						
	2000-01	2001-02	2002-03	2003-04	2004-05	FY 2003-04–2004-05	FY 2000-01–2004-05
Rail[1]	6,920	6,470	7,250	6,060	7,890	+30%	+14%
Bus[2]	6,310	7,150	5,760	6,130	5,680	–7%	–10%
Rail and Bus[3]	**6,410**	**7,040**	**5,990**	**6,120**	**6,090**	**–<1%**	**–5%**



Source: Transit Operators

A service call occurs when a vehicle requires repair and cannot complete scheduled service.

Reliability improves as the average number of miles between service calls increases.

[1]Includes BART, VTA light rail, Muni light rail

[2]Includes AC Transit, SamTrans, Valley Transportation Authority (VTA), Golden Gate Transit

[3]Combined "Rail and Bus" average is weighted by revenue vehicle miles of service.

- Because buses account for approximately 82 percent of regional transit service (measured in revenue service miles), the considerable improvements in rail performance are offset, on a relative basis, by the decline in bus performance. As a result, the weighted average number of miles between service calls for the bus and rail operators combined was almost unchanged between FY 2003-04 and FY 2004-05. Looking at the longer term, reliability of service (as measured by distance traveled between service calls) has declined by 5 percent since FY 2000-01.

Airports and Seaports

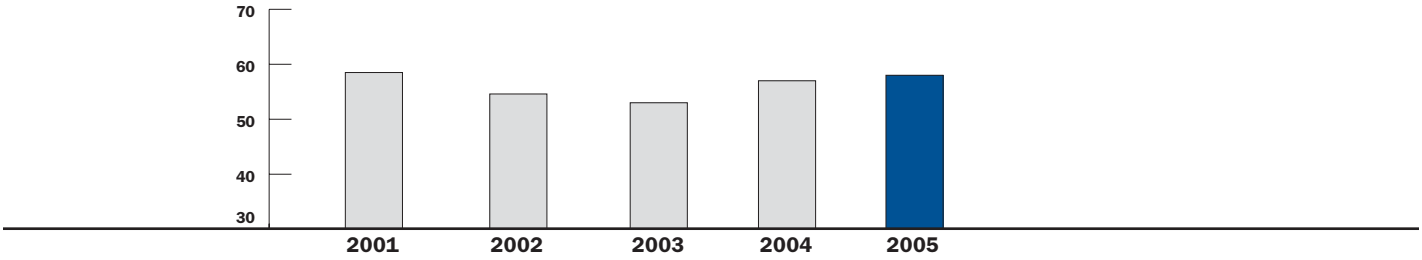
The Bay Area has three major airports (San Francisco International Airport, Oakland International Airport and San Jose International Airport) and four major seaports (San Francisco, Oakland, Redwood City and Richmond). Airports and seaports are included in this report because they serve as regional gateways and generate considerable ground traffic by cars, trucks and rail. Statistics on air passengers and air and marine cargo are presented to track changes in traffic generated by airports and seaports.

Air Passenger and Cargo Volumes Barely Budge in 2005; Both Measures Still Below 2001 Levels

- Passenger and cargo activity at Bay Area airports inched forward in 2005, with both categories recording growth rates in the 1 to 2 percent range. However, this is only the second time — 2004 being the first — since 2000 that both measures increased in any given year. Neither air passenger nor air cargo volumes have returned to the levels reached in 2000, before the collapse of the dot-com boom and the September 11, 2001 terrorist attacks.
- San Francisco International Airport (SFO) continues to process more than half the region's air passengers, and saw a slight 2 percent increase in 2005 passenger figures. At San Jose International Airport, air passenger volume was essentially flat. Passenger levels at both SFO and San Jose International are still below 2001 figures, down 3 percent and 18 percent respectively.

Air Passengers at Bay Area Airports, 2001–2005

	Millions of Passengers[1]					Percent Change	
Airport	**2001**	**2002**	**2003**	**2004**	**2005**	**2004–2005**	**2001–2005**
San Francisco	34.0	30.8	28.8	32.2	32.8	+2%	–3%
Oakland	11.4	12.7	13.5	14.1	14.4	+2%	+26%
San Jose	13.1	11.1	10.7	10.7	10.8	+<1%	–18%
Total	**58.5**	**54.6**	**53.0**	**57.0**	**58.0**	**+2%**	**–1%**



Sources: Port of Oakland, San Jose International Airport, San Francisco International Airport.

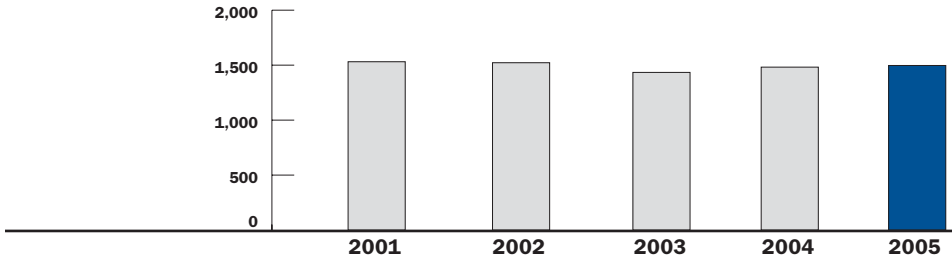
[1]Measured by enplanements and deplanements.

- Oakland International Airport has bucked regional and national aviation trends and has experienced a 26 percent increase in passengers since 2001. While 2005 saw a leveling off of passenger growth at Oakland International — an increase of only 2 percent — the airport now accounts for 25 percent of the regional air passenger market, compared to a 20 percent market share in 2001.

- Air cargo volume in the region grew by 1 percent in 2005, but is still 2 percent below 2001 figures. San Francisco International was the only airport to report a measurable increase in 2005, with volumes rising 5 percent. San Jose International continued its recent downward trend, losing 13 percent of its volume from 2004. Oakland International cargo activity held steady in 2005, but since 2001 Oakland's air cargo volumes have increased 11 percent. This has helped the region to nearly offset the 7 percent and 34 percent decreases at San Francisco and San Jose International Airports, respectively, over the same time period.

Air Cargo at Bay Area Airports, 2001–2005

	Thousands of Tons[1] of Cargo					Percent Change	
Airport	**2001**	**2002**	**2003**	**2004**	**2005**	**2004–2005**	**2001–2005**
Oakland	671	717	682	742	741	–<1%	+11%
San Francisco	701	650	632	620	651	+5%	–7%
San Jose	159	155	120	120	105	–13%	–34%
Total	**1,531**	**1,522**	**1,434**	**1,482**	**1,497**	**+1%**	**–2%**



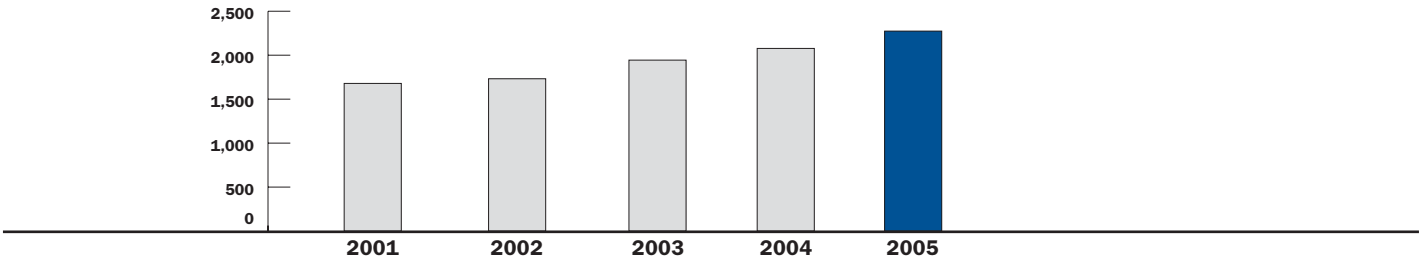
Sources: Port of Oakland, San Jose International Airport, San Francisco International Airport
[1]One ton = 2,000 pounds

Bay Area Ports Continue Strong Growth in Both Container and Bulk Cargo Sectors

- Bay Area ports continued to show strong growth in both container and bulk cargo in 2005, buoyed by the continuing boom in global trade. The ports of Oakland and San Francisco are focusing their investments and marketing efforts on their individual areas of strength. The Port of Oakland's strength is containerized cargo, while the Port of San Francisco is focusing on the bulk cargo sector. This approach appears to be paying off for the region, which saw increases of 10 percent for both container and bulk traffic in 2005.
- In the Bay Area, the Port of Oakland now accounts for 100 percent of the region's container cargo. In 2005, the Port of San Francisco stopped all container service, which had accounted for only a modest share of regional volumes in recent years. Conversely, container traffic at the Port of Oakland has surged 38 percent since 2001. Volume increased 11 percent in 2005, when the Port of Oakland processed nearly 2.3 million containers. Despite the loss of the Port of San Francisco's container service, the region saw a 10 percent increase in container volumes in 2005, and a 35 percent increase since 2001. Goods imported in containers include electronics, toys and cloth. Container exports, a key segment of the Port of Oakland's business,

Container Marine Cargo at Bay Area Seaports, 2001–2005

	Thousands of TEU[1] Containers					Percent Change	
Seaport	**2001**	**2002**	**2003**	**2004**	**2005**	**2004–2005**	**2001–2005**
Oakland	1,644	1,708	1,923	2,045	2,274	+11%	+38%
San Francisco[2]	35	24	21	32	0	–100%	–100%
Total	**1,679**	**1,732**	**1,944**	**2,077**	**2,274**	**+10%**	**+35%**



Sources: Ports of Oakland and San Francisco

[1]TEU = Twenty-foot equivalent

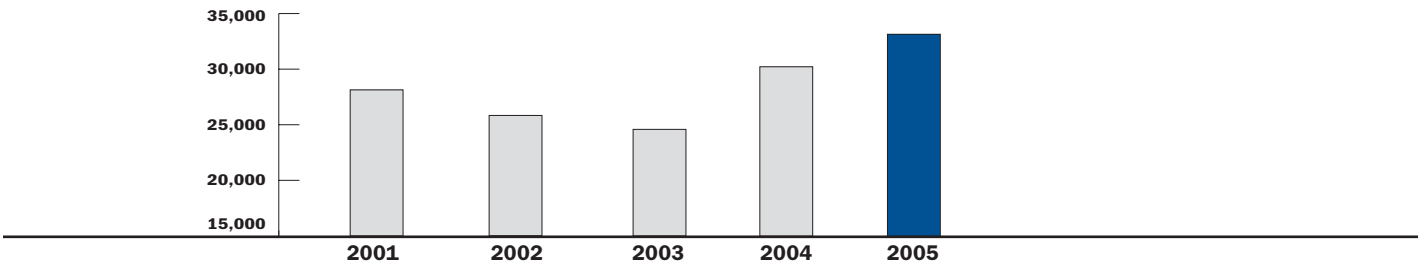
[2]San Francisco discontinued its container cargo operations in 2005.

include agriculture products, scrap metal, waste paper and electronics from the Silicon Valley.

- Bulk cargo volumes, which were more impacted than container volumes by the 2000 dot-com bust and the 2001 terrorist attacks, saw another solid year of growth, increasing 10 percent in 2005. Since 2001, bulk cargo volumes have increased 18 percent in the region, reaching over 33 million tons in 2005.
- The Port of Richmond, which handles roughly 84 percent of the region's bulk cargo, continued its strong growth, with volume increases of 10 percent in 2005. The primary Northern California entry point for oil and gasoline, the Port of Richmond handled nearly 28 million tons of bulk cargo in 2005, a 15 percent increase since 2001.
- The ports of Redwood City and San Francisco also saw growth in bulk cargo activity in 2005, with volume increases of 3 percent and 29 percent, respectively. The Port of San Francisco, with its renewed focus on break bulk services, has experienced an impressive 112 percent jump in volume since 2001, and is nearing the 2-million-ton mark. The Port of Oakland, which is focusing instead on container growth, saw a 12 percent reduction in bulk volumes in 2005, and a 34 percent reduction since 2001. However, these losses were more than offset regionally by bulk cargo growth at the other Bay Area ports.

Bulk Marine Cargo at Bay Area Seaports, 2001–2005

	Thousands of Tons[1] of Bulk Cargo					Percent Change	
Seaport	**2001**	**2002**	**2003**	**2004**	**2005**	**2004–2005**	**2001–2005**
Richmond	24,185	21,977	20,269	25,313	27,911	+10%	+15%
Redwood City	1,124	1,016	1,509	1,977	2,032	+3%	+81%
San Francisco	925	1,379	1,365	1,518	1,965	+29%	+112%
Oakland	1,901	1,445	1,441	1,424	1,257	–12%	–34%
Total	**28,135**	**25,817**	**24,584**	**30,232**	**33,165**	**+10%**	**+18%**



Sources: Ports of Oakland, Redwood City, Richmond, San Francisco

[1]One ton = 2,000 pounds

Note: Bulk marine cargo also passes through the Port of Benicia, but in substantially smaller volumes than at the four largest ports. This report does not include data from the Port of Benicia.

Appendix A:
Notes on Data Collection

NOTES ON DATA COLLECTION

This compendium of key data on the state of the Bay Area transportation system is intended to provide the best snapshot possible, given existing information collected by Bay Area transportation agencies. Because the data have been gathered by multiple sources, responding to varying requirements, differences exist with respect to methodology, frequency, time period covered, level of detail and other variables. Following are some general comments, plus specific discussions of data by category.

Time Period Covered

Most data is collected and reported by calendar year (January 1 to December 31). Transit data is collected and reported by state fiscal year (July 1 to June 30), as is the custom for accounting purposes. Every effort was made to assemble consistent data for the five-year period 2001 through 2005 (or, for data collected by fiscal year, 2000-01 through 2004-05).

Future Data Collection

Emerging technologies are beginning to make more complete data available and promise to contribute even more significantly in the future. Examples of emerging data collection technologies that are expected to improve data in future reports include the following:

- Sensors embedded in the pavement and on the roadside of many Bay Area freeways already continuously count vehicles and monitor travel speeds on freeways. Automated data from these sensors is available 24 hours a day, 365 days a year. This gives us a much more accurate understanding of roadway conditions compared to areas not yet equipped with sensors, where traffic counts are taken just a few days a year. Caltrans has developed the ability to use traffic data from these sensors, where in place, to measure traffic congestion. When installation of these in-pavement sensors is complete, it will be possible to report on congestion over the entire freeway system.

- Data collected through the 511 Driving Times℠ system, which uses FasTrak® electronic toll tags installed in autos and trucks to estimate the time it takes to travel between fixed points on the freeway, may supplement that from in-pavement sensors. In the *State of the System 2006* report, we have used data from in-pavement sensors to report average travel time and buffer time, a measure of travel time reliability, for selected freeway trips. These systems also allow measurement of variations in travel time on weekdays and weekends, and to account for congestion caused by road construction and collisions.

- Cities are deploying "smart" traffic signal systems that continuously count vehicles on local roadways. These systems are deployed on only a small subset of streets, however. Most traffic counts on local roadways will continue to be done by traditional methods on an occasional basis.

- Transit agencies' fleet management systems will track the times that buses and trains arrive and depart transit stops. By comparing these times to transit schedules, the fleet management systems will generate more complete on-time performance statistics.

Data Collection Techniques Used for This Report

System in Brief

Population and Employment Trends *(page 3)*

Population data is taken from California Department of Finance estimates. The estimates in this report reflect population as of July 1 of each year. City and county population estimates are available at: www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E1/E-1text.asp

Employment data is taken from the California Employment Development Department (EDD) "Wages and Salary" data series. EDD estimates annual employment by industry based on reports by employers. Self-employed workers, unpaid family workers, private household workers and individuals on unpaid leave from work are not included in the data. Because it is the number of jobs rather than workers that is reported, workers holding more than one job may be counted more than once. Employment data is published on the EDD Web site at: www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=4&SubID=171

Commute Mode Share *(page 4)*

The U.S. Census Bureau collects data on commute behavior including mode of travel. In 2000, the Census Bureau began a pilot program, called the American Community Survey, to collect data on an annual basis rather than a 10-year cycle. The American Community Survey collects all the information currently measured by the decennial census long form, including commute characteristics. Advantages of the American Community Survey over the decennial long form include annual updates and faster release of data. Disadvantages include a smaller sample set and potentially less-accurate results than the decennial census. However, the sample size for the American Community Survey still far surpasses any other surveys of commute behavior and thus is believed to be the most accurate information available. The American Community Survey began full implementation in 2005. Data collected by the U.S. Census Bureau is available at: factfinder.census.gov/home/saff/main.html?_lang=en

Mobility: Getting Around the Bay Area

Freeway Congestion *(pages 8–11)*

The measure used to indicate congestion is daily vehicle hours of delay. Delay occurs when the average speed falls below 35 miles per hour for 15 minutes or more. This data has been collected every year since 1981 (except for 1985 and 1997, when budget limitations forced Caltrans to forgo the program). Trained personnel drive specially equipped vehicles on the freeway system during morning and evening commute hours to collect information on average travel speeds and travel times, which is then used to calculate daily delay. Data is collected on Tuesdays, Wednesdays and Thursdays during the spring and fall of each year. Due to budget limitations in 2004 and 2005, congestion monitoring was performed for only the most congested portions of the region's freeway system, which account for approximately 60 percent of congested miles and 75 percent of total delay.

Commute Reliability *(pages 12–15)*

State of the System 2006 reports for the first time on the reliability of driving commutes in the Bay Area. Traffic speed data is collected by automated sensors in the freeway pavement throughout the course of a year. On freeway segments with good sensor coverage, speed data for typical weekdays (Tuesday, Wednesday and Thursday) can be used to calculate average start-to-finish driving times for a given trip as well as the buffer times needed to complete 95 percent (19 out of 20) of these peak period trips on schedule. The data used to calculate average commute time and reliability can be accessed at pems.eecs.berkeley.edu/ For this report, commute reliability is presented for the morning and evening commutes for seven origin and destination pairs. Future *State of the System* reports are expected to provide a more complete picture of Bay Area commute reliability by encompassing a larger number of freeway commute segments.

Toll Bridge Traffic *(pages 16–17)*

The Bay Area Toll Authority (BATA), which oversees the collection of tolls on state-owned bridges in the Bay Area, tracks the number of vehicles crossing each of the seven state-owned bridges. Traffic counts reflect vehicle crossings in the tolled direction for accounting purposes. BATA also tracks the percentage of vehicles that pay tolls by means of the FasTrak® electronic toll collection system. The Golden Gate Bridge, Highway and Transportation District tracks traffic and FasTrak® usage for the Golden Gate Bridge. The average daily traffic for each bridge is the total annual traffic divided by 365 days. Data on traffic, revenue and FasTrak® usage for the seven state-owned bridges is available on the Bay Area Toll Authority Web site at: bata.mtc.ca.gov/tolls/index.htm Data on traffic, revenue and FasTrak® usage for the Golden Gate Bridge is available on the Web at: www.goldengatebridge.org/research/GGBTraffToll.php

Carpool Lanes — Time Savings and Usage *(pages 18–21)*

Caltrans District 4 collects data on carpool-lane usage and travel-time savings annually. Data on lane usage is compiled from direct observations by people situated on the side of the freeway adjacent to the carpool lanes. Travel-time savings are computed by comparing travel time in the carpool lane with that in the adjacent mixed-flow lanes during the peak morning and evening commute hours. For carpool lanes that are not congested, travel time is based on the speed limit on the free-

way. For carpool lanes that are congested, Caltrans drives specially equipped "floating cars" to record travel time and speed. The same "floating car" technique is used to measure the travel time in adjacent mixed-flow lanes. Caltrans District 4 annually publishes a report with complete data on carpool-lane usage and travel-time savings. This report also includes detailed information on the hours of operation, number of people using the carpool lane compared to adjacent general purpose lanes, and violation rates. The Caltrans District 4 reports can be found at: www.dot.ca.gov/dist4/reports.htm

Local Traffic *(pages 22–23)*

Under state law, county congestion management agencies are charged with monitoring congestion on local roadways. Two Bay Area counties, Sonoma County and Napa County, have exercised an option in the law to opt out of this requirement. The remaining seven counties monitor congestion on local roadways and publish the results at least every two years in a county congestion monitoring report. Most counties report in odd-numbered years; Alameda, Contra Costa and Santa Clara counties typically report in even-numbered years.

County congestion management agencies measure local roadway congestion by calculating the "level of service" on a selected set of high-priority roads during peak commute periods. Level of service describes traffic conditions based on speed and travel time, volume and capacity, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Level of service is expressed in grades from A through F, with level of service A representing the best operating conditions and level of service F the worst. At level of service A, B and C, traffic flows smoothly and delay is minimal. This report characterizes these conditions as "uncongested." At level of service D and E, traffic flow becomes unstable, conditions characterized in this report as "moderately congested." At level of service F, traffic is stop-and-go, characterized in this report as "severely congested."

The level of service grade is based on delay experienced by vehicles traveling through major intersections or on average travel speeds over selected segments of local roadways. The procedures for monitoring local roadway level of service are established on a county-by-county basis. Thus, it is more appropriate to compare the results for each county from year to year than to compare results across different counties. Links to congestion management agencies for counties in the Bay Area may be found on the MTC Web site at: www.mtc.ca.gov/links/regional.htm

Transit On-Time Performance *(pages 24–25)*

Transit operators monitor on-time performance as a measure of the quality of the service they provide. Like most data on transit operations, on-time performance is reported by fiscal year. Data usually is collected by persons who record the arrival time of individual transit vehicles at key stops. (BART's central computer system automates collection of on-time performance data.) On-time performance data is used by operators primarily as an internal management tool. When deteriorating on-time performance can be traced back to increasing roadway congestion, the data may be used to develop more realistic, revised schedules. San Francisco Muni publishes on-time performance data in its quarterly performance reports as required under Proposition E, passed by San Francisco voters in 1999.

Transit Ridership *(pages 26–27)*

This report uses transit boardings as a measure of ridership. A boarding refers to each time a passenger enters a transit vehicle or train station. One person may board multiple vehicles to complete a trip. Methods used to collect this ridership data include tracking transit fare receipts and hiring people to count passenger boardings. Transit operators report ridership for each fiscal year to the Federal Transit Administration for inclusion in the National Transit Database. National Transit Database publications and data can be found at: www.ntdprogram.com/ntdprogram/ MTC summarizes transit ridership and other operating statistics for Bay Area operators in its annual report, *Statistical Summary of Bay Area Transit Operators,* which covers a rolling five-year period and may be viewed at: www.mtc.ca.gov/library/statsum/statsum.htm

Safety

Motor Vehicle Collisions and Motor Vehicle Collisions Involving Pedestrians or Cyclists *(pages 32–33)*

The California Highway Patrol (CHP) maintains the most complete data on motor vehicle collisions, including those that involve pedestrians or cyclists. The database, called Statewide Integrated Traffic Records System, includes injuries and fatalities resulting from all collisions reported to local law enforcement as well as to the Highway Patrol. The Highway Patrol publishes the series *Annual Report of Fatal and Injury Motor Vehicle Traffic Collisions,* which includes summary statistics by county and for the entire state. This is available on the Web at: www.chp.ca.gov/html/publications.html Data at a less aggregated level can be requested from the CHP.

State of Repair

State Highway Pavement Conditions *(pages 36–37)*

Caltrans conducts an annual survey of the pavement condition on all state-owned roads in California. Roads are inspected visually for potholes and cracks that indicate damage to the road structure lying beneath the pavement. In addition, Caltrans measures the comfort of the ride on the pavement using roving vehicles that measure the smoothness of the road. Because road structure and ride quality are not always positively correlated — for example a road with poor ride quality may not have any structural damage — both factors are considered in determining which roads are in need of repair. The results of the pavement condition survey are published by Caltrans in the State of the Pavement report series published by the Caltrans Division of Maintenance and available at: www.dot.ca.gov/hq/maint/roadway.htm Pavement condition data is reported by calendar year.

Local Roadway Pavement Conditions *(pages 38–39)*

Most Bay Area jurisdictions use MTC's Pavement Management System, or an equivalent system, to track conditions of streets and roads and develop cost-effective repair schedules. MTC's Pavement Management System measures pavement conditions according to a pavement condition index (PCI) that ranges from 0 to 100, where 100 is the best possible score. Surveyors record the type and severity of pavement distress, such as cracking, weathering and patching through physical inspections. This information is then entered into the Pavement Management System to calculate the PCI.

The characterization of pavement conditions in 2005 is based on the most recent data submitted to MTC by local jurisdictions. For those jurisdictions (64 in number) that had their last inspections done in 2005, the PCI scores were considered current. For the remaining jurisdictions — those whose most recent inspections were done in years prior to 2005 — MTC staff used its Pavement Management System software to project PCI scores forward to 2005, relying on estimates (provided by individual jurisdictions or by the State Controller's Office) of revenue available to each jurisdiction for local roadway maintenance.

Transit Service Calls *(pages 40–41)*

A service call occurs any time transit service is disrupted because a transit vehicle cannot complete a scheduled trip or cannot start the next scheduled trip. Transit operators report total service calls to the Federal Transit Administration as part of the National Transit Database. Operators also report the miles of service provided annually (annual revenue service miles) as part of the National Transit Database. MTC uses these data to calculate the total number of service calls per million miles of service provided by the seven largest bus and rail operators. National Transit Database data and reports may be found at: www.ntdprogram.com/ntdprogram/

Airports and Seaports

Airport Passenger and Cargo Volumes *(pages 44–45)*

Statistics on airport passengers are based on information supplied to the airports from the airline carriers' computer reservation systems. These numbers are in turn used to collect landing fees from the carriers and for planning efforts at the airports. Statistics on air cargo are reported by private carriers to the airports. Private carriers (e.g., Federal Express, UPS) submit tonnage reports to the airports for planning and billing

purposes. Much of this data is made available on the Web by the three major Bay Area airports.

Seaport Marine Cargo Volumes *(pages 46–47)*

Private operators at the ports collect data on marine cargo. For bulk goods, tonnage is tracked and used by the ports to collect fees. For containers, fees are paid to the port based on the contents of the containers and the number of total containers is tracked for planning purposes.

Appendix B:
Congested Freeway Locations – Morning and Evening Commutes, 2005

Morning Peak-Period Congested Locations, 2005 (ordered by county and route)

COUNTY	ROUTE	DIR.	DAILY DELAY (vehicle hours)	DURATION (AM)	LOCATION
ALA	24	E	1,140	6:05–10:20	Route 13 to Caldecott Tunnel
ALA	24	W	340	8:00–9:40	East of Telegraph Avenue to I-580
ALA/CC	80	W	10,930	5:45–10:15	Route 4 to Bay Bridge metering lights
ALA	84	W	80	5:30–9:50	At Dumbarton Bridge toll plaza*
ALA	92	W	130	7:50–9:20	At San Mateo-Hayward Bridge toll plaza*
ALA	238	N	260	5:50–8:55	I-580 to south of I-880 southbound off-ramp*
ALA	238	S	70	7:15–8:15	I-880 to south of Castro Valley Boulevard*
ALA/CC	580	E	110	6:50–9:25	Central Avenue to Buchanan Street*
ALA	580	W	140	5:45–7:30	East of I-205 interchange to west of Grant Line Road
ALA	580	W	5,830	5:55–9:20	West of North Flynn Road to Airway Boulevard
ALA	580	W	360	6:45–9:15	Hopyard Road to I-680*
ALA	580	W	380	6:25–8:10	Strobridge Avenue to Route 238*
ALA	580	W	130	6:35–9:25	MacArthur Boulevard to Grand Avenue
ALA	580	W	120	7:35–9:20	West of Route 24 to east of Route 80
ALA	680	N	130	7:50–9:00	At I-580 and at Alcosta Boulevard*
ALA	880	N	1,750	6:00–8:55	North of West Grand Avenue to Maritime Street
ALA	880	N	660	6:50–9:40	North of Decoto Road to Industrial Parkway
ALA	880	N	170	7:35–9:10	Route 92 to south of Hesperian Boulevard*
ALA	880	N	220	7:15–9:50	Route 238 to Davis Street and at Hegenberger Road*
ALA	880	N	280	7:50–9:00	Hegenberger Road to High Street*
ALA	880	S	1,570	7:50–10:55	North of Thornton Avenue to Route 262 (Mission Blvd.)
ALA	880	S	330	7:35–9:20	Industrial Parkway to south of Fremont Boulevard
ALA	880	S	1,700	6:45–9:40	South of Hesperian to Tennyson Road
CC	4	W	420	6:45–8:45	Bailey Road to Willow Pass Road*
CC	4	W	4,000	5:05–9:55	A Street/Lone Tree Way to west of Loveridge Road
CC	24	W	290	6:15–8:55	Camino Pablo to Fish Ranch Road
CC	24	W	220	7:35–9:05	I-680 to east of Central Lafayette exit*
CC	242	S	100	6:45–8:30	Concord Avenue to I-680*
CC	580	W	270	6:15–8:55	Marine Street undercrossing to Richmond-San Rafael Bridge toll plaza*
CC	680	N	650	7:25–9:30	North of Crow Canyon Road to north of El Cerro Boulevard

* Segment monitored in 2003

County abbreviations: ALA=Alameda; CC=Contra Costa; MRN=Marin; SCL=Santa Clara; SF=San Francisco, SM=San Mateo; SOL=Solano; SON=Sonoma

Morning Peak-Period Congested Locations, 2005 (continued)

COUNTY	ROUTE	DIR.	DAILY DELAY (vehicle hours)	DURATION (AM)	LOCATION
CC	680	S	1,160	6:45–9:10	South Main Street to El Pintado Road
CC	680	S	860	6:40–8:40	Monument Boulevard to North Main Street
CC	680	S	200	6:10–8:30	North of Route 4 to Contra Costa Boulevard
MRN	101	S	4,490	6:35–10:00	South of Route 37 to I-580
SCL	17	N	150	7:45–8:40	North of Camden Avenue*
SCL	85	N	210	6:40–9:20	At Bernal Road on-ramp (metering lights)*
SCL	85	N	390	7:10–9:15	Almaden Expressway to Union Avenue*
SCL	85	N	470	7:10–9:50	Route 17 to Saratoga Avenue*
SCL	85	N	120	7:20–8:45	North of Saratoga Avenue and at De Anza Boulevard*
SCL	85	N	510	7:00–9:45	I-280 to El Camino Real and at U.S. 101*
SCL	87	N	100	8:50–10:00	Curtner Avenue to Almaden Expressway*
SCL	101	N	470	6:40–8:45	South of Tenant Avenue to South of Cochran Road
SCL	101	N	590	6:20–8:40	North of Blossom Hill Road to North of Tully Road
SCL	101	N	2,320	7:05–10:00	Julian Street/McKee Road to North of Trimble Road
SCL	101	N	380	7:30–9:15	Ellis Street to Route 85*
SCL	101	N	300	6:40–9:10	At San Antonio Road*
SCL	237	E	180	7:50–9:20	At Mathilda Avenue and at I-880 southbound off-ramp connector*
SCL	237	W	340	7:20–9:10	I-880 split to Zanker Avenue*
SCL	280	N	150	7:15–8:15	U.S. 101 to Reed Street*
SCL	280	N	410	6:50–9:10	Meridian Avenue to I-880*
SCL	680	N	60	7:40–8:20	Capitol Expressway to McKee Road*
SCL	680	S	200	7:40–8:45	At U.S. 101*
SCL	880	N	160	7:15–10:15	South of U.S. 101 to Brokaw Road
SCL	880	S	50	7:40–8:40	Montague Expressway to Brokaw Road*
SF	80	E	1,080	7:05–9:25	U.S. 101 to Sterling Street on-ramp
SF	80	W	720	5:40–9:55	At Fremont Street
SF	101	N	370	7:25–9:25	North of Alemany Boulevard to I-80
SF	101	N	130	7:05–9:25	I-80 to Mission Street
SF	101	S	10	6:55–8:00	At I-80*
SF	280	N	280	6:40–8:15	Alemany Boulevard to U.S. 101*
SF	280	N	180	7:30–9:15	Mariposa Street to King Street*

* Segment monitored in 2003

County abbreviations: ALA=Alameda; CC=Contra Costa; MRN=Marin; SCL=Santa Clara; SF=San Francisco, SM=San Mateo; SOL=Solano; SON=Sonoma

Morning Peak-Period Congested Locations, 2005 (continued)

COUNTY	ROUTE	DIR.	DAILY DELAY (vehicle hours)	DURATION (AM)	LOCATION
SM	101	N	600	7:30–9:30	Willow Road to Woodside Road*
SM	101	N	1,730	6:55–9:50	Hillsdale Boulevard to south of Anza Boulevard
SM/SCL	101	N	870	7:20–9:55	South of University Avenue to north of Woodside Road
SM/SCL	101	S	1,310	7:35–9:15	North of Marsh Road to Route 85
SM	101	S	1,270	7:35–10:00	North of Route 92 to north of Whipple Avenue
SM	101	S	200	7:40–9:15	Sierra Point Parkway to Harney Way*
SM	280	S	290	7:15–8:50	Route 1 to Avalon Drive*
SOL/ SON	37	W	70	6:40–8:40	At Skaggs Island Road and at Sonoma/Solano county line*
SOL	37	W	220	6:10–8:15	Mare Island interchange to post mile 6 and post mile 4 to Skaggs Island*
SOL	80	W	320	5:50–7:45	Solano Avenue to Carquinez Bridge toll plaza*
SOL	80	W	350	6:15–8:20	Abernathy Road to west of Route 12*
SON	101	N	370	7:20–9:10	Route 116 to Golf Road and Hearn Avenue to College Avenue*
SON	101	S	2,120	5:50–8:40	Old Redwood Highway to Kastania Road
SON	101	S	80	7:25–8:50	End of HOV lane to Wilfred Avenue*
SON	101	S	430	7:10–9:10	Airport Boulevard to south of River Road*

* Segment monitored in 2003

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Evening Peak-Period Congested Locations, 2005 (ordered by county and route)

COUNTY	ROUTE	DIR.	DAILY DELAY (vehicle hours)	DURATION (PM)	LOCATION
ALA	24	E	1,890	3:50–7:00	West of 52nd Street to Caldecott Tunnel
SF/ALA	80	E	3,120	3:05–7:10	Yerba Buena Island to Powell Street in Emeryville
ALA	80	E	2,350	2:45–6:25	I-580 interchange to north of Gilman Street
ALA/SF	80	W	2,800	4:00–7:10	At Bay Bridge toll plaza and incline section of Bay Bridge to Fifth Street
ALA	80	W	1,780	2:40–6:15	Gilman Street to I-580
ALA	84	E	160	3:25–6:15	Newark Boulevard to I-880*
ALA	92	E	3,880	3:05–7:20	Clawiter Road to I-880
ALA	238	N	190	2:50–6:45	I-580 to south of I-880*
ALA	238	S	450	3:45–6:35	I-880 to Castro Valley Boulevard*
ALA	580	E	1,620	3:45–7:15	Portola Avenue to First Street
ALA	580	E	6,100	2:50–7:35	I-680 to east of El Charro Road
ALA	580	E	440	4:15–6:05	Route 24 to Fruitvale Avenue
ALA	580	W	70	3:45–6:05	East of Redwood Road to Strobridge Avenue
ALA	680	N	660	3:15–6:15	Route 262 (Mission Blvd.) to Washington Avenue*
ALA	880	N	370	4:00–7:10	South of Fremont Boulevard to Auto Mall Parkway*
ALA	880	N	200	4:00–7:25	South of Thornton Avenue to Fremont Boulevard
ALA	880	N	1,470	4:20–7:20	North of Fremont Boulevard to Tennyson Road
ALA	880	N	470	4:25–6:35	At A Street and at Route 238 interchange*
ALA	880	N	260	3:40–5:15	Coliseum Way to north of High Street
ALA	880	S	440	4:00–5:45	North of Route 92 to Industrial Parkway and north of Route 84 to Fremont Boulevard
ALA	880	S	420	4:00–6:25	At Hesperian Boulevard and A Street to Route 92*
ALA	880	S	410	4:45–6:15	Hegenberger to 98th Avenue and Davis Street to Marina Boulevard and at I-238*
ALA	880	S	370	4:45–6:15	Oak Street to Embarcadero and at Fruitvale Avenue and at 42nd Avenue*
CC	4	E	660	4:10–5:55	Pacheco Boulevard to Willow Pass Road
CC	4	E	3,780	3:10–7:25	West of Bailey Road to A Street/Lone Tree Way
CC	24	E	190	3:50–6:00	At Acalanes and at I-680*
CC	24	W	1,070	4:20–7:10	West of Camino Pablo to Fish Ranch Road
CC/ALA	80	E	530	4:00–6:30	Buchanan Street to San Pablo Avenue*
CC	80	E	250	4:25–6:00	El Portal Road to Pinole Valley Road*

* Segment monitored in 2003

County abbreviations: ALA=Alameda; CC=Contra Costa; MRN=Marin; SCL=Santa Clara; SF=San Francisco, SM=San Mateo; SOL=Solano; SON=Sonoma

Evening Peak-Period Congested Locations, 2005 (continued)

COUNTY	ROUTE	DIR.	DAILY DELAY (vehicle hours)	DURATION (PM)	LOCATION
CC	680	N	620	4:00–6:35	North of Bollinger Canyon Road to Sycamore Valley Road*
CC	680	N	710	3:30–6:00	El Pintado Road to north of Livorna Road*
CC	680	N	1,040	4:15–5:50	Livorna Road to north of North Main Street
CC	680	N	1,490	3:35–7:00	Burnett Avenue to Concord Avenue and Arthur Road to Benicia-Martinez Bridge
CC	680	S	720	4:30–6:40	Olympic Boulevard to south of Rudgear Road
MRN	101	N	3,690	3:05–7:05	North of Marin City exit to north of Central San Rafael interchange
MRN	101	N	550	3:20–6:25	Atherton Avenue to north beginning of expressway*
MRN	101	N	300	3:15–6:25	At north of San Antonio Road*
MRN	101	S	180	4:30–6:55	South of Waldo Tunnel to county line*
MRN	580	W	590	2:40–6:50	Bellam Blvd. to U.S. 101*
SCL	17	S	100	4:20–6:00	North of Hamilton Avenue*
SCL	85	S	30	5:40–6:50	At Route 87*
SCL	85	S	280	4:20–6:45	Route 17 to south of Union Avenue*
SCL	85	S	490	3:40–6:50	Stevens Creek Boulevard to De Anza Boulevard*
SCL	85	S	750	3:45–7:15	Central Expressway to north of Homestead Road
SCL	87	S	1,720	2:35–6:25	North of Julian Street to Lelong Street
SCL	101	N	1,200	4:25–6:55	Route 237 to South of Embarcadero Road
SCL	101	S	2,060	4:50–8:35	Julian Street/McKee Road to Capitol Expressway
SCL	101	S	2,000	4:15–7:40	Lawrence Expressway to North of 13th Street
SCL	101	S	2,370	3:55–7:10	University Avenue to south of Shoreline Boulevard
SCL	237	E	220	3:30–7:10	Great America Parkway to North First Street*
SCL	237	E	400	3:30–7:10	At I-880 connector*
SCL	237	W	340	5:00–6:45	McCarthy Boulevard to North First Street and Mathilda Avenue to U.S. 101*
SCL	280	S	530	4:50–6:30	Moorpark Avenue East to 11th Street*
SCL	280	S	310	4:45–6:40	At De Anza Boulevard and at Saratoga Avenue*
SCL	280	S	140	5:10–6:30	El Monte Road to north of Magdalena Avenue*
SCL	680	S	310	5:05–6:10	South of Calaveras Road to north of Landess Avenue
SCL	880	N	900	3:30–7:20	Montague Expressway to Dixon Landing Road

* Segment monitored in 2003

County abbreviations: ALA=Alameda; CC=Contra Costa; MRN=Marin; SCL=Santa Clara; SF=San Francisco, SM=San Mateo; SOL=Solano; SON=Sonoma

Evening Peak-Period Congested Locations, 2005 (continued)

COUNTY	ROUTE	DIR.	DAILY DELAY (vehicle hours)	DURATION (PM)	LOCATION
SCL	880	S	190	5:10–6:50	U.S. 101 to First Street and Route 82 to north of Bascom Avenue*
SCL	880	S	720	4:10–6:45	Montague Expressway to south of Old Bayshore Highway
SF	80	E	5,140	2:40–9:25	U.S. 101 from Alemany Boulevard to I-80; I-80 from U.S. 101 to Sterling Street on-ramp
SF	80	W	640	3:45–7:30	East of Harrison Street to I-80/U.S. 101
SF	101	S	330	3:40–7:20	North of South Van Ness Avenue to I-80 interchange and U.S. 101/I-80 to Alemany Boulevard
SF	280	S	260	4:30–6:15	U.S. 101 to Alemany Boulevard*
SF	280	S	150	4:50–6:30	Mariposa Street to Pennsylvania Avenue*
SM	92	W	80	5:15–6:15	U.S. 101 to Delaware Street*
SM	101	N	940	4:40–6:30	South of Holly Street to north of Kehoe Avenue
SM	101	N	560	5:00–6:45	Third Avenue to north of Broadway
SM	101	S	50	4:50–5:50	At Woodside Road and at Willow Road*
SM	101	S	310	3:30–6:30	At Poplar Avenue*
SM	101	S	200	3:20–6:00	Millbrae Avenue to Broadway*
SM	280	N	210	5:30–6:30	Sandhill Road to Woodside Road and north of Woodside Road*
SM	280	N	160	5:20–6:40	I-380 to Westborough Boulevard*
SM	380	W	100	5:00–6:40	At I-280*
SOL	80	E	220	3:35–6:40	At Carquinez Bridge toll plaza*
SOL	80	E	730	3:50–5:25	I-680 to Suisun Valley Road
SOL	80	E	230	4:30–6:30	East of Magellan Road to east of Travis Boulevard*
SOL	680	N	620	3:10–6:35	South of Cordelia Street to I-80*
SON	37	E	170	3:45–6:10	At Route 121*
SON	101	N	100	4:25–6:05	North of East Washington Avenue*
SON	101	N	120	3:50–6:10	At Old Redwood Highway*
SON	101	N	2,280	2:05–6:50	Gravenstein Highway to Wilfred Avenue and Baker Avenue to College Avenue
SON	101	S	1,360	2:45–6:10	South of Fulton Road to 5th Street

* Segment monitored in 2003

County abbreviations: ALA=Alameda; CC=Contra Costa; MRN=Marin; SCL=Santa Clara; SF=San Francisco, SM=San Mateo; SOL=Solano; SON=Sonoma

Appendix C:
Injury and Fatal Motor Vehicle Collisions Involving Bicyclists and Pedestrians by Bay Area Jurisdiction, 2005

Injury and Fatal Motor Vehicle Collisions Involving Bicyclists and Pedestrians by Bay Area Jurisdiction, 2005

	PEDESTRIAN-INVOLVED COLLISIONS				BICYCLE-INVOLVED COLLISIONS			
JURISDICTION	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL
Alameda County								
Alameda	30	1	31	36	26	0	26	30
Albany	8	0	8	8	11	0	11	6
Berkeley	98	0	98	119	115	0	115	134
Dublin	4	0	4	6	6	0	6	4
Emeryville	9	1	10	8	1	0	1	5
Fremont	48	3	51	54	40	1	41	62
Hayward	46	1	47	69	44	0	44	45
Livermore	12	1	13	18	29	0	29	34
Newark	11	0	11	9	11	0	11	11
Oakland	293	10	303	311	139	0	139	127
Piedmont	2	0	2	2	2	0	2	1
Pleasanton	7	0	7	10	18	0	18	20
San Leandro	38	1	39	32	8	0	8	19
Union City	9	2	11	15	6	0	6	10
Unincorporated Alameda County	35	3	38	41	48	1	49	37
Alameda County Total	**650**	**23**	**673**	**737**	**504**	**2**	**506**	**546**
Contra Costa County								
Antioch	26	1	27	21	13	0	13	19
Brentwood	3	1	4	7	4	0	4	4
Clayton	0	0	0	1	5	0	5	1
Concord	32	2	34	35	63	0	63	42
Danville	5	0	5	7	12	0	12	11
El Cerrito	22	0	22	14	11	0	11	10
Hercules	3	0	3	1	1	0	1	1
Kensington	0	0	0	1	1	0	1	2
Lafayette	1	0	1	3	2	0	2	4
Martinez	11	0	11	8	7	1	8	7
Moraga	0	1	1	1	2	0	2	2
Oakley	1	0	1	3	4	0	4	3

Injury and Fatal Collisions Involving Bicyclists and Pedestrians, 2005 (continued)

JURISDICTION	PEDESTRIAN-INVOLVED COLLISIONS				BICYCLE-INVOLVED COLLISIONS			
	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL
Orinda	0	0	0	4	0	0	0	2
Pinole	4	0	4	7	3	0	3	2
Pittsburg	18	1	19	20	14	0	14	9
Pleasant Hill	16	1	17	11	21	0	21	20
Richmond	43	2	45	53	27	0	27	27
San Pablo	17	0	17	20	5	0	5	11
San Ramon	5	0	5	4	7	0	7	6
Walnut Creek	25	0	25	20	16	0	16	25
Unincorporated Contra Costa Co.	24	2	26	35	27	0	27	36
Contra Costa County Total	**256**	**11**	**267**	**276**	**245**	**1**	**246**	**244**
Marin County								
Belvedere	0	0	0	0	0	0	0	0
Corte Madera	2	1	3	3	18	0	18	11
Fairfax	1	0	1	3	1	0	1	3
Larkspur	4	0	4	4	5	0	5	6
Mill Valley	5	0	5	4	8	0	8	5
Novato	14	0	14	15	17	0	17	21
Ross	0	0	0	1	0	0	0	1
San Anselmo	2	0	2	6	13	0	13	8
San Rafael	32	1	33	33	24	0	24	36
Sausalito	3	0	3	3	13	0	13	14
Tiburon	1	0	1	0	4	0	4	2
Unincorporated Marin County	6	0	6	10	20	0	20	33
Marin County Total	**70**	**2**	**72**	**82**	**123**	**0**	**123**	**139**
Napa County								
American Canyon	1	0	1	1	3	0	3	2
Calistoga	1	0	1	2	2	0	2	2
Napa	18	1	19	29	47	1	48	38
Saint Helena	0	0	0	4	2	0	2	3

Injury and Fatal Collisions Involving Bicyclists and Pedestrians, 2005 (continued)

JURISDICTION	PEDESTRIAN-INVOLVED COLLISIONS				BICYCLE-INVOLVED COLLISIONS			
	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL
Yountville	1	0	1	1	0	0	0	0
Unincorporated Napa County	1	1	2	2	12	1	13	12
Napa County Total	**22**	**2**	**24**	**40**	**66**	**2**	**68**	**57**
San Francisco County								
San Francisco County Total	**743**	**16**	**759**	**862**	**349**	**2**	**351**	**335**
San Mateo County								
Atherton	0	0	0	3	6	0	6	5
Belmont	6	0	6	6	6	0	6	7
Brisbane	0	0	0	1	1	0	1	0
Broadmoor*	1	0	1	0	0	0	0	0
Burlingame	18	1	19	15	6	0	6	8
Colma	1	0	1	3	0	0	0	0
Daly City	38	0	38	35	6	0	6	9
East Palo Alto	10	0	10	20	7	0	7	12
Foster City	6	0	6	2	4	0	4	5
Half Moon Bay	3	0	3	3	8	0	8	6
Hillsborough	1	0	1	1	1	0	1	2
Menlo Park	11	0	11	15	13	1	14	20
Millbrae	13	0	13	8	5	0	5	3
Pacifica	11	0	11	9	5	0	5	4
Portola Valley	0	0	0	0	1	0	1	7
Redwood City	25	1	26	34	36	0	36	34
San Bruno	24	0	24	17	11	0	11	9
San Carlos	1	0	1	8	11	0	11	13
San Mateo	34	1	35	46	30	0	30	42
South San Francisco	23	2	25	27	9	0	9	16
Woodside	0	0	0	0	2	1	3	7
Unincorporated San Mateo Co.	7	0	7	13	28	1	29	34
San Mateo County Total	**233**	**5**	**238**	**266**	**196**	**3**	**199**	**243**

*Reported in Unincorporated prior to 2002

Injury and Fatal Collisions Involving Bicyclists and Pedestrians, 2005 (continued)

JURISDICTION	PEDESTRIAN-INVOLVED COLLISIONS				BICYCLE-INVOLVED COLLISIONS			
	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL
Santa Clara County								
Campbell	7	1	8	10	14	0	14	13
Cupertino	13	0	13	14	32	0	32	27
Gilroy	8	0	8	14	22	0	22	12
Los Altos	1	1	2	7	15	0	15	24
Los Altos Hills	1	0	1	0	3	0	3	5
Los Gatos	8	1	9	7	17	0	17	13
Milpitas	14	2	16	13	15	0	15	18
Monte Sereno	0	0	0	0	1	0	1	1
Morgan Hill	1	1	2	6	3	0	3	7
Mountain View	29	2	31	21	41	0	41	47
Palo Alto	32	1	33	26	85	1	86	66
San Jose	309	14	323	336	288	1	289	295
Santa Clara	18	2	20	29	36	0	36	30
Saratoga	3	1	4	3	15	0	15	14
Sunnyvale	28	6	34	27	42	1	43	45
Unincorporated Santa Clara Co.	16	1	17	16	27	1	28	32
Santa Clara County Total	**488**	**33**	**521**	**529**	**656**	**4**	**660**	**650**
Solano County								
Benicia	7	0	7	7	3	0	3	3
Dixon	1	0	1	4	6	0	6	5
Fairfield	44	2	46	41	36	0	36	35
Rio Vista	3	0	3	1	1	0	1	1
Suisun City	3	0	3	5	6	0	6	3
Vacaville	9	2	11	14	16	0	16	19
Vallejo	51	1	52	55	18	0	18	29
Unincorporated Solano County	5	1	6	5	2	1	3	4
Solano County Total	**123**	**6**	**129**	**131**	**88**	**1**	**89**	**101**

Injury and Fatal Collisions Involving Bicyclists and Pedestrians, 2005 (continued)

JURISDICTION	PEDESTRIAN-INVOLVED COLLISIONS				BICYCLE-INVOLVED COLLISIONS			
	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL	2005 INJURY	2005 FATAL	2005 INJURY and FATAL	2000–2004 ANNUAL AVG. INJURY and FATAL
Sonoma County								
Cloverdale	2	0	2	1	2	0	2	3
Cotati	0	0	0	2	2	0	2	3
Healdsburg	4	0	4	2	7	0	7	5
Petaluma	20	0	20	23	27	0	27	26
Rohnert Park	5	0	5	8	10	0	10	10
Santa Rosa	43	3	46	53	56	1	57	68
Sebastopol	4	0	4	6	5	0	5	7
Sonoma	0	0	0	5	1	0	1	3
Windsor	2	0	2	4	3	0	3	4
Unincorporated Sonoma County	12	4	16	24	30	1	31	36
Sonoma County Total	**92**	**7**	**99**	**129**	**143**	**2**	**145**	**165**
Bay Area Total	**2,677**	**105**	**2,782**	**3,051**	**2,376**	**17**	**2,393**	**2,480**

Appendix D:
Pavement Condition of Bay Area Jurisdictions, 2005

Pavement Condition Index (PCI) for Bay Area Jurisdictions, 2005

2005 Average PCI	Jurisdiction	2004 Average PCI
Very Good		
86[1]	Oakley	84
85	Los Altos	85
83	Contra Costa County (unincorporated)	85
83[1]	Dixon	84
83[1]	Sunnyvale	83
82	City of Santa Clara	84
82	Emeryville	NA
82[1]	Foster City	79
81[1]	Brentwood	87
81[1]	Gilroy	82
80	Livermore	79
80	Vacaville	75
79	Belvedere	83
79	Clayton	68
79	Santa Clara County (unincorporated)	69
78[1]	Campbell	80
78	Colma	47
78	Concord	79
78[1]	Dublin	79
78[1]	Newark	78
78	Pleasanton	73
77	City of Sonoma	79
77	Fairfield	78
76	American Canyon	76
76	Morgan Hill	65
76[1]	Union City	77
76	Windsor	72
75	Danville	76
Good		
74[1]	Corte Madera	74
74[1]	Hercules	76
74	Los Gatos	67
74	Mountain View	76
74[1]	Redwood City	74
73	Los Altos Hills	74
73	San Ramon	74
72[1]	Fairfax	66
72	Monte Sereno	53
71	Alameda County (unincorporated)	63
71	Daly City	69
71[1]	Fremont	71
71	Pinole	72
71[1]	Sausalito	68
70	Antioch	70
70	Benicia	71
70[1]	Cloverdale	67
70	Novato	64
70	South San Francisco	63
69[1]	Cupertino	68
69	Lafayette	54
69	Milpitas	70
69	Rohnert Park	71
67	Brisbane	69
67[1]	Burlingame	67
67[1]	Cotati	69
67[1]	Hayward	67
67	Saratoga	69
66[1]	Piedmont	67
66	San Bruno	57
66	San Mateo County (unincorporated)	62
66	Yountville	70
65[3]	City and County of San Francisco	64
65[1]	Healdsburg	66
65[1]	Mill Valley	66
65	Pleasant Hill	59

Pavement Condition Index (PCI) for Bay Area Jurisdictions, 2005 (continued)

2005 Average PCI	Jurisdiction	2004 Average PCI
65[1]	Portola Valley	66
65	San Carlos	64
65	San Mateo	54
65[1]	Sebastopol	67
65	Tiburon	58
64	Atherton	71
64[1]	City of Alameda	65
64	Menlo Park	60
64	Pittsburg	67
64[1]	San Jose	64
64	San Pablo	66
63[1]	East Palo Alto	63
63	Pacifica	70
63	San Rafael	64
62	Millbrae	61
62[1]	Moraga	64
62	San Leandro	64
62	Santa Rosa	64
62	Woodside	64
61[1]	Belmont	61
60[1]	Albany	61
60	Petaluma	64
60[2]	St. Helena	63
Fair		
59[1]	Ross	62
59[1]	San Anselmo	60
58	Berkeley	67
58[1]	Half Moon Bay	55
58[1]	Hillsborough	63
58	Solano County (unincorporated)	58
57[1]	Calistoga	55
55[1]	Martinez	58
55	Vallejo	54
53[1]	Napa County (unincorporated)	59
53	Suisun City	55
52[1,3]	Oakland	56
51[1]	City of Napa	52
51	El Cerrito	61
51	Rio Vista	53
50	Larkspur	55
48	Orinda	46
47[1]	Marin County (unincorporated)	50
47	Richmond	47
Poor		
44	Sonoma County (unincorporated)	44
No Data		
NA	Palo Alto	NA
NA	Walnut Creek	NA

Source: Metropolitan Transportation Commission

2005 PCI scores based on pavement databases updated in 2005 unless noted.

2004 PCI score is based on inspections between 2000 and 2004.

[1] 2005 PCI score is an estimate based on inspections done between 2002 and 2004. (See note on page 53.)

[2] PCI score is an estimate based on inspections prior to 2002.

[3] Score has been correlated to the PCI scale from an alternate pavement management system.

NA = not available

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